

Appendix A

Waste Management Materials Characterization

Summary of ARD Assessment by Material Type

The conclusions from the material characterization program are summarized below for each of the different sources of material.

Drill Core Samples

1. Unoxidized diatomite demonstrates a moderate to high potential to generate acid based on the NAG results. This potential to generate acid is confirmed by low pH values (<3 s.u.) observed for the unoxidized diatomite in the Meteoric Water Mobility Procedure (MWMP) tests;
2. The acid generating potential demonstrated by the unoxidized diatomite results from the presence of highly reactive AVS phases, including mackinawite and amorphous iron monosulfides, that would generate acid if exposed to air and water. Given the mineralogy of sulfide in the samples, sulfide oxidation will be fairly rapid;
3. The weathered samples of unoxidized diatomite collected from the existing pit walls in 2004 show a greater potential for acid generation and metals release than the unweathered samples of unoxidized diatomite collected from drill core. This increase in predicted acid generation potential provides an indication of how the unoxidized diatomite will behave in response to weathering of the material (i.e., in lieu of kinetic tests);
4. Constituents that have the potential to be leached from the unoxidized diatomite under low pH conditions at concentrations above Oregon MCL values include aluminum, antimony, arsenic, beryllium, cadmium, fluoride, iron, lead, manganese, selenium, sulfate and TDS;
5. Sulfide sulfur was not detected in the oxidized diatomite samples, and this material type is considered inert in terms of geochemical reactivity. The MWMP and NAG results for oxidized diatomite support this prediction;
6. The average MWMP values for oxidized diatomite are lower than the Oregon MCL for all parameters except aluminum and arsenic. Aluminum concentrations are an artifact of the high clay content of the deposit and the average arsenic concentrations are just slightly above the Oregon MCL of 0.01 mg/L. Therefore, based on the MWMP results, the oxidized diatomite samples show a low potential to release metals and sulfate. Furthermore, weathered samples of oxidized diatomite collected from the existing pit walls in 2004 do not show an increase in the potential for acid generation and metals release due to weathering (as is observed with the unoxidized diatomite);
7. The partially oxidized diatomite (i.e., transitional) demonstrates a moderate potential for acid generation based on the NAG results and shows a low to moderate potential to release metals and sulfate. Constituents that have the potential to be leached from the transitional diatomite at concentrations above the Oregon MCL include aluminum, arsenic, manganese, sulfate and TDS. The concentration of the constituents, however, are lower than observed for the unoxidized diatomite;

8. The diatomite observed in MW-6 differs from the diatomite at the other locations and has been altered by heat and pressure to form opalized diatomite. In this location, the opalized diatomite contains euhedral pyrite that is not seen in any of the other drill locations. The presence of pyritic sulfur at concentrations slightly greater than 0.5 wt% in this location results in a slightly greater potential for acid generation based on the ABA and NAG results;
9. Only a few samples of the volcanic units (ash, tuff, andesite and basalt) demonstrate some neutralization potential, indicating there is a general absence of minerals capable of buffering acidity (i.e., carbonates) in the system. Based on the NAG results, the volcanic samples are non-acid generating. This prediction is confirmed by pH values observed in the MWMP tests. Based on these results, the volcanic rock types are considered relatively benign, and neither acid generation nor acid neutralization is anticipated. Furthermore, based on MWMP results, only a minor amount of metals and sulfate are expected to be leached from the volcanic units; and
10. The results for each material type are consistent from one mine area to another, demonstrating the geochemistry of the lithologic units are generally uniform for the different mine areas. The majority of the waste rock associated with the existing and proposed operations will consist of either oxidized diatomite or unoxidized diatomite. The oxidized diatomite contains no sulfide material and is essentially inert. The unoxidized diatomite contains monosulfides and is considered acid generating, based on NAG and MWMP data. Any acid generated is not likely to be buffered under normal field conditions due to the limited acid neutralizing capacity of this material type and the very slow reaction kinetics of silica buffering. Under these conditions, water rock interactions will result in low pH conditions, thereby increasing the leachability of metals from the unoxidized diatomite.

Mineral Process Waste Samples

1. During processing of ore at the Vale Plant Site, the chemical composition of the ore is altered. Because of the addition of the soda ash, the neutralizing potential of the mineral process waste materials is increased, as demonstrated by ABA results;
2. The MWMP leachate from waste stream samples has very basic pH values (i.e., greater than 9 s.u.) and very high alkalinity in comparison to the corresponding source material. However, in addition to the increased neutralization capacity of the mineral process waste, the leachability is also increased for some metals and sulfate;
3. MWMP for the waste stream samples shows an increase in the potential release of oxyanion-forming elements (e.g., arsenic and selenium) after the blended ore is heated and oxidized during processing; and
4. This assessment is based on a relatively short time frame and, as a result, only provides a snap-shot of the characteristics of the waste stream materials that have been back-hauled to the mine in the past, rather than a comprehensive range.

Backfill Waste Samples

1. The backfilled waste samples consist of a mixture of mineral process waste as well as onsite waste material. The characterization results reflect this mixing, and show the potential for metals leaching is reduced in comparison to the waste stream material that comprises only a small percentage of the backfilled waste;
2. The MWMP results for the backfilled waste show a bimodal distribution with some samples showing a low potential for metals release and some samples showing a moderate potential for metals release that is slightly less than that observed for the unoxidized diatomite;
3. Constituents that have the potential to be leached from the backfill waste include aluminum, arsenic, beryllium, iron, manganese, sulfate, and TDS. However, concentrations observed for the backfill waste are generally lower than those observed for the waste stream samples, indicating dilution has taken place with the addition of onsite waste materials that consist of clay, ash, and diatomite;
4. For samples of backfill waste with high pH leachate chemistry, oxyanion-forming elements such as arsenic, antimony, and selenium increase in concentration due to a change in mineral surface chemistry which promotes the desorption of oxyanions. However, the magnitude of these element concentrations is lower in comparison to the mineral process waste samples; and
5. There is no distinguishable difference between the geochemistry of the backfilled waste in the Kelly Field Pit versus backfilled waste material in the Beede Desert Pit.

Sediment Pond Samples

1. The sediment pond samples have neutralization potential ratio (NPR) values greater than 3 and positive net neutralizing potential (NNP) values on the order of 10 eq. kg CaCO₃. This is in part due to sulfide sulfur concentrations near or below the detection limit and presence of measureable neutralization potential. However, according to the BLM criteria, the ABA results for the sediment pond samples are inconclusive. Because these samples were not submitted for NAG testing, the acid generation potential of this material cannot be verified with NAG pH and NAG values. However, based on the low to non-detect sulfide sulfur concentrations, the sediment pond samples are generally considered inert.
2. From the MWMP test, the sediment pond samples generated leachate with a pH around 4.5 to 5 s.u., and these samples showed a moderate potential to leach aluminum, manganese and sulfate at concentrations above the Oregon MCL. The overall concentration of these constituents is lower than those observed for the unoxidized diatomite. Therefore, it can be concluded that pumping water from the pits to the sediment ponds may increase the acid and metal loading within the pond areas; however, the concentrations are still below those observed for background conditions (i.e., unoxidized diatomite).

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Appendix B

Sampling and Analytical Plan for the Celatom Mine



Sampling and Analytical Plan for the Celatom Mine

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Revision 1*

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1 Introduction

The Celatom Mine is an industrial minerals mine site in eastern Oregon, owned and operated by EP Minerals, LLC (EPM). The following Sampling and Analytical Plan (SAP) has been prepared to provide a detailed description of the sampling protocols that will be used during future monitoring events at the Celatom Mine including sample collection methods, frequency and type of analytical methods as well as decontamination and quality control procedures. This plan describes sample collection from the point of the sampler arriving at the sampling station, through delivery of the samples to the analytical laboratory. This plan also provides guidelines for documentation of the sampling event including data verification and validation and reporting.

This SAP will be managed as a “living” document and may be modified to integrate data from ongoing monitoring activities.

2 Sample Collection Methods

2.1 Surface Water Sample Collection

2.1.1 Sample Locations and Frequency

Three (3) surface water features in the vicinity of the Celatom operations have been routinely sampled in the past and will be included in this monitoring program. These include two developed springs (Box Spring and Tub Springs) and one man-made pond in Hidden Valley. This SAP also includes procedures for collecting water quality samples from surface water that may collect within the open pits. The sample sites are shown in the map provided in Attachment 1 and described below.

Box Springs

Box Spring – Box Spring is a developed spring located in an unnamed drainage immediately east of the Kelly Field Pit operations. Water flow from Box Spring is captured and fed into a half-buried stock tank via a metal pipe. Overflow from this stock tank drains to a second stock tank located immediately downgradient via PVC piping. From this stock tank, overflow is discharged to a small surface drainage that carries the water away from the stock tank area. Flow measurements and water quality samples are collected from the metal pipe feeding the first (i.e., upgradient) stock tank.

Tub Springs

The Tub Spring site is a developed spring within the Sage Flat basin and water issuing from this spring discharges to Sage Flat at a point northeast of the confluence with the Mill Gulch drainage. Spring water is captured with metal pipes and fed into a half-buried stock tank outfitted with overflow pipes that discharge to a low lying area where it collects within two ponds separated by a barbed wire fence. Flow measurements and water quality samples are collected from the metal pipe feeding the stock tank.

Hidden Valley

The Hidden Valley Pond is a small man-made BLM stock grazing pond located at the lower end of Hidden Valley. This pond is an ephemeral water feature that is fed by intercepted surface water (stormwater) from the Hidden Valley watershed. The pond is elongate and oriented in line with the valley topography. Water is stored behind a berm constructed across the drainage on the downgradient margin of the pond. The pond has shallow sloping margins that gently deepen toward the downgradient end. This pond undergoes significant seasonal fluctuation, as evidenced by high

water marks and a broad shoreline of mud with signs of desiccation. Samples are collected near the berm when the pond contains water.

Mill Gulch

Mill Gulch seeps will be tested up-gradient of mining activities and down-gradient of mining activities.

Pit Water

Prior to re-initiation of mining activities in the spring, any water that has collected in the pits is pumped to a series of unlined evaporation ponds located downgradient from the active pit areas. Pit water is monitored to ensure pH values remain between 5 and 7.5 s.u. If the pH is below a standard unit of 5, then a sample of the water will be collected for chemical analysis. If necessary, corrective action will be taken. Corrective action may include but is not limited to water treatment with agricultural lime, dilution with well water or treatment with soda ash.

2.1.2 Surface Water Sample Collection Procedures

Surface water sources will be monitored on an annual basis during the active mining season. Water quality samples will be collected from the surface water locations by the same sample team within a two week period in order to ensure comparable results. Pit water samples are collected during the mining season as it is available.

The surface water sampling will be documented with field notes and photographs that provide a description of the general conditions of the site. If water is present and suitable for sampling, a water quality sample will be collected. Field parameters including temperature, pH, electrical conductivity (EC), and total dissolved solids (TDS) will be collected at each site with a handheld Myron L Ultrameter, or similar meter. The meter is calibrated each day prior to use.

Surface water samples will be collected in labeled one-gallon containers and placed in a cooler with ice as soon after collection as possible. Gloves will be worn during sampling and processing and care will be taken to avoid potential contamination. The sample water is then transferred into labeled bottles and filtered and/or preserved as required the same day as collection as described in Section 3. Fresh tubing and filters will be used for each individual sample. Some sample aliquots not requiring filtering will be filled in the field directly from the source.

Where obtainable, flow measurements will be taken using a stopwatch and calibrated bucket or other graduated collection vessel. Using the stopwatch, the time it takes to fill the bucket will be recorded. This procedure will be repeated at least three times and averaged together for a final result.

2.2 Groundwater Sample Collection

2.2.1 Sample Locations and Frequency

Groundwater samples will be collected on an annual basis during the mining season. Groundwater samples will be collected from 12 monitoring wells (MW-3 through MW-14) and one piezometer (PZ-3). The wells that will be included in this sampling program are summarized in Table 1 below. Two of the monitoring wells (MW-2 and MW-11) do not produce water and samples cannot be obtained from these wells. Sample methods that will be applied during this sample event are described in the following section. A round of water levels will also be collected from all monitoring wells and piezometers listed in Table 1. Water level measurements only will be collected from

piezometers PZ-4, PZ-5s and PZ-5d. A map showing the monitoring well locations is provided in Attachment 1 along with monitoring well completion details. For any mining area, if mining advances up-gradient beyond the most existing up-gradient monitoring well, a new monitoring well will be installed up-gradient of mining.

Table 1: Groundwater Monitoring Locations

Monitoring Well	Total Depth Drilled	Depth to GW (static)	Monitoring Well Completion			DWR Start Card #	Well Tag ID
			well head protection	top of casing	screen		
			ft ags	ft ags	ft bgs		
MW-2 ^a	112	Dry	3.10	2.50	92-112	182108	L81353
MW-3	55	27.05	3.20	2.0	30-50	182109	L81362
MW-4	66.5	19.69	2.95	2.41	35-55	182110	L81357
MW-5	101	25.15	3.02	2.48	81-101	182111	L81356
MW-6	73	34.73	3.05	2.55	52.3-72.3	182112	L81355
MW-7s	46	25.20	3.10	2.20	25.5-45.5	182114	L81360
MW-7d	225.5	20.90	2.90	2.48	176-216	182113	L81361
MW-8	52	26.12	2.70	2.35	25-45	182115	L81358
MW-9	102	70.20	2.80	2.40	82-102	182116	L81359
MW-10B	29	13.80	3	2.6	9-29	182117	L81354
MW-11 ^a	126	Dry	2.8	2.6	106-126	182118	L81352
MW-12	107	16.39	2.75	1.95	20-70	198236	L95813
MW-13	300	188.12	2.75	2.33	258-298	202153	L99242
MW-14	250	186.78	2.7	2.45	210-250	202155	L99241
PZ-3	499	Artesian	3	2.1	458-498	202156	L99243
PZ-4 ^b	137	44.5	2.95	2.45	96-136	202157	L99112
PZ-5s ^b	345	98.7	2.25	2.17	305-345	202158	L99247
PZ-5d ^b	551	278.82	2.42	2.08	520-550	202159	L99246

^a Well has been dry since installation samples cannot be collected at this location.

^b Only water levels will be collected from these wells.

2.2.2 Low Flow Purging Method

Groundwater samples will be collected using low flow sampling techniques as described by Puls and Barcelona in USEPA's *Ground Water Issue Paper Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures* (April 1996) and provided in Attachment 2. This method minimizes the impact that purging can have on groundwater chemistry during sample collection (such as sediment leaching, oxidation and element desorption) and ensures that the samples collected are representative of groundwater conditions.

Low flow sampling is accomplished by lowering the pump intake to the screen interval and pumping at a rate that approximates the hydraulic conductivity of the aquifer and minimizes the amount of drawdown. Pumping at this rate is continued until field parameters stabilize and then samples are collected. The pump intake is positioned above the bottom of the screen interval to avoid disturbing any sediment that may have settled at the bottom of the well.

2.2.3 Sample Equipment

An adjustable rate pump capable of low flow pumping (e.g., Megamonsoon or Geosub pump) will be used to collect groundwater samples for laboratory testing. The pump will be constructed of inert materials (i.e., stainless steel and PVC) in order to minimize contamination. Dedicated polyethylene tubing will be used and disposed of after each use to prevent cross-contamination between each well. The power source for the pump will be a truck battery that is connected using power cables. The power cable for the pump is measured with a measuring tape and marked for accurate placement of the pump intake within the well. For the two deeper monitoring wells MW-13 and MW-14, an alternative pump will be used that can pump from greater than 200 feet below ground surface (e.g., Grundfos Pump or a bladder pump w/ drop tube).

Groundwater will be pumped directly into a closed flow through cell equipped with a multi-parameter meter. The water quality parameters monitored during purging include pH, dissolved oxygen, turbidity (visual), electrical conductivity, and temperature. This meter is calibrated every day prior to initiating sampling activities. An in-line disposable filter is used for preparation of the dissolved metal sample aliquot. An electronic water level indicator will be used to measure the depth to water during purging and sample collection. The length of the water level indicator will need to be greater than the screened interval of the deepest monitoring well.

2.2.4 Groundwater Sample Collection Procedures

The following describes the low flow purging and sampling procedures that will be followed during groundwater sample collection:

1. The depth to water is measured using an electronic water level indicator and recorded. These measurements are taken relative to a the steel well casing;
2. The depth and the length of the screen interval will be obtained from available well information and the midway point of the screen calculated. The pump and tubing are slowly lowered into the well until the pump intake is placed near the middle of the screen interval;
3. Following placement of the pump, the depth to water is measured again and noted. The water level indicator probe is left in the well for monitoring drawdown during purging;
4. The discharge line of the pump is attached to the flow-through-cell and the discharge line from the flow-through-cell is directed to a 5-gallon bucket;
5. The pump is connected to the power source and the rate of pumping is slowly increased. As the rate of pumping is increased, depth to water is continuously measured until a steady flow rate is obtained and a minimal drawdown can be maintained (less than 0.5 feet). If the drawdown is greater than 0.5 feet, then the flow rate need to be decreased;
6. During purging, water level is recorded approximately every five minutes along with field parameters including pH, temperature, conductivity, and dissolved oxygen. Purging is continued until three successive readings indicate field parameters have stabilized;
7. Following stabilization of the parameters, the flow rate is maintained during sample collection in order to minimize disturbance of the water column. Samples are collected from the discharge line from the pump prior to passing through the flow through cell in individual, pre-preserved sample bottles provided by the laboratory.
8. The dissolved metals sample aliquot is collected after all the other sample containers are filled using an in-line filter fitted onto the end of the discharge tube. Groundwater from the

monitoring well is allowed to pass through the filter for approximately 1 minute prior to filling the preserved sample container; and

9. Sample bottles are placed in an insulated cooler and sealed with a signed custody/security seal and shipped to the respective laboratories. All coolers are accompanied with Chain-of-Custody documentation.

2.2.5 Deviation from Standard Sample Collection Methods

Due to low permeability conditions of the diatomite aquifer, stabilization of drawdown cannot always be achieved. Under these conditions, there is a potential to create unrepresentative conditions during sampling and obtain false positives for unfiltered metals due to the disturbance of sediment during purging. If it is not possible to maintain drawdown and the water level is constantly decreasing during purging, the samples should be collected before the depth to water falls below the top of the well screen. According to the low-flow procedure, complete dewatering of the well screen is not recommended. If parameters do not stabilize before complete dewatering of the well screen occurs, the pump can be lowered to mid-screen and allowed to sit for 24 hours prior to being pumped. This will reduce the amount of time it takes for parameters to stabilize after which the sample can be collected.

Monitoring wells that have demonstrated low permeability conditions during previous sample events include MW-4, MW-5, MW-6, MW-7D, MW-8 and MW-9. For these wells, drawdown and recovery were a problem during low flow purging; however, complete dewatering of the well screen did not occur for any of the wells.

2.2.6 Sample Equipment Decontamination Procedures

During the sample program, dedicated sampling equipment is used for sample collection to reduce sample cross contamination. However, the pump and water level indicator are not dedicated and need to be decontaminated in between each sample location to reduce the potential for cross contamination.

During set-up at each location, the water level indicator probe and tape are decontaminated by unraveling approximately 10 feet of the tape into a bucket containing phosphate free detergent (i.e., Liquinox), agitating the tape in the water by hand and rinsing with distilled water. This rinse is followed by a final rinse with de-ionized/distilled water. The power cable for the pump is decontaminated using the same method as used for the water level indicator probe and tape.

The pump is decontaminated by placing the entire pump in a short PVC tube with a cap containing Liquinox and distilled water. The pump is lifted and lowered through the soapy water several times and the outside of the pump housing is scrubbed. The pump is then rinsed with distilled water followed by a final rinse with de-ionized/distilled water.

Decontaminated equipment is placed on plastic sheeting following decontamination and prior to purging and sample collection in order to minimize the potential for contamination from the soil.

3 Identification of Laboratory Parameters

The principal purpose of the sample program is to provide information necessary to determine the potential for mining operations to degrade surface water and groundwater. Analytical Request Forms (ARFs) have been developed to ensure that the data collected, specifically the parameters analyzed and their respective analytical detection limits, meet the objectives of the program.

The first step in ARF development is to identify current and potential future beneficial uses of surface water and groundwater in the area. The Celatom project is located in the Malheur Lake Basin. The designated beneficial uses listed for the Malheur River Basin in OAR 340-041-0201 include: water supply (domestic, irrigation and industrial), livestock, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality. However, state promulgated standards for these beneficial uses are not available. Therefore, the only standards considered during the selection of analytical parameters and methods include the Oregon Maximum Contaminant Levels (MCLs) for drinking water regulated by 333-061-0030 along with non-regulatory wildlife toxicity criteria and general geochemistry parameters.

The identified "Applicable or Relevant and Appropriate Requirements" (ARARs) form the basis for identifying the minimum detection limit that laboratory analytical methods should achieve. After determining which parameters require analysis, the second step is to identify the lowest ARAR concentration. Based on this evaluation, a laboratory method with a detection limit below the lowest ARAR is selected for the analysis of groundwater. This process establishes the "Data Quality Objectives" (DQOs).

Two types of samples will be collected during the monitoring program including surface water samples and groundwater samples. The ARFs for each of these sample types are provided in Attachment 3 and tabulate the most restrictive ARAR concentration for each parameter (designated as the required analytical detection limit) and the water fraction from which the analysis is to be made. The only difference between the surface water ARF and groundwater ARF is the inclusion of total metals for the surface water samples; the list of parameters and required detection limits are the same because they are both based on the same standards (i.e., drinking water standards under 33-061-0030). Water quality standards (Oregon MCLs per 333-061-0030) are based on total metal concentrations; however total and dissolve metal results from past sample events have shown there is a high potential for contamination from suspended fine particles in the groundwater samples due to the fine-grained nature of the sedimentary deposit. Consequently, total metals results are not specified for the groundwater samples.

The ARFs will be sent to an Oregon-certified laboratory along with the Chain-of-Custody documentation to notify the laboratory of the required detection limits in order to select which of the available and appropriate laboratory method(s) would be most suitable to meet the requirements.

4 Sample Preparation and Shipping

Water samples will be collected in individual, pre-preserved sample bottles provided by the laboratory for the requested analysis. The number of containers, volume of sample, sample preparation and respective suite of analytes for each sample bottle set is summarized in Table 2.

At the conclusion of the sampling trip, the sampler prepares the sample containers for shipment to the analytical laboratory. The samples are packaged with packing material and blue ice packs in Department of Transportation (DOT) approved insulated coolers, and shipped via overnight courier to the designated analytical laboratory. A signed custody/security seal is affixed to the cooler prior to shipment in a manner that requires breaking the seal when the cooler is opened. Separate COCs and ARFs are provided in each cooler and that the sample designations on the COC and ARF within the cooler match each other as well as the samples contained in the cooler.

Samples collected for laboratory analysis will be placed in an insulated cooler and sealed with a signed custody/security seal and shipped via overnight courier to ACZ Laboratory in Steamboat, Colorado, and Oregon-certified laboratory. All coolers are accompanied with Chain-of-Custody documentation.

Table 2: Sample Bottle Allocation

Type	Volume	Preservatives	Sample Preparation	Analytes
HDPE	500 mL	None	Unfiltered	General Chemistry
HDPE	250 mL	Sulfuric Acid (H ₂ SO ₄)	Unfiltered	Nitrate+Nitrite
HDPE	250 mL	None	Filtered ¹	Anions
HDPE	250 mL	Nitric Acid (HNO ₃)	Unfiltered	Total Metals
HDPE	500 mL	Nitric Acid (HNO ₃)	Filtered ¹	Dissolved Metals

¹A disposable 0.45 µm filter is used to prepare the filtered sample aliquots.

In all cases, samples collected during the sampling event are expeditiously shipped to the laboratory. However, if the sampling event is not completed at the end of the day and there are no serious limitations on holding times for the parameters to be analyzed, it is feasible to hold samples in an on-site secured refrigerator overnight or longer until completion of the sampling event or until a shipping cooler has been filled to capacity. This maximizes the efficiency of sample shipment. Alternatively, the shipping cooler(s) can remain in the custody of the individual sampler, provided that the appropriate sample temperature is maintained.

5 Quality Assurance/Quality Control

Controlling and assuring the quality of the sample during acquisition in the field is another key element to running a successful monitoring program. This program includes QA/QC samples collected as a check on sample collection and handling procedures, as well as a check on analytical accuracy and precision.

5.1 Quality Control Samples

Three types of quality control (QC) samples will be collected at a frequency that meets the data quality objectives (about 10% per sample set). Quality Control samples will include duplicates, field blanks and rinsate blanks and are described below.

Duplicate Sample: Duplicate samples are collected to check for the natural sample variance and the consistency of field techniques and laboratory analysis. During each sampling event, one duplicate sample will be collected from a randomly determined sampling location. Duplicate samples are collected following the same procedures as the original sample.

Field Blanks: Field blanks check for contamination of samples due to factors at the sampling site and laboratory error. Under normal conditions, a complete set of bottles used for one sample are taken empty to the field and filled at the sampling location site with the deionized (preferably) or distilled water being used for equipment and container decontamination at the time the original samples are being collected. One field blank will be collect during each sampling event. The location where the blank is collected is randomly selected from the locations being sampled.

Rinsate Blank: Rinsate blank samples are obtained by pouring de-ionized water over decontaminated sampling equipment and the “rinsate” is collected in order to assess the effectiveness of the decontamination procedures in preventing cross-contamination between sampling locations.

5.2 General QA/QC Procedures

Quality assurance is also provided by the manner in which the samples are handled during collection. The sampler should always wear disposable latex gloves when collecting or handling open sample containers with water matrix. Sample containers are filled at the same time at the sampling sites, secured with the lid and excess water is wiped off of the exterior.

The sample bottle labels are filled out and the prepared bottles are placed in field coolers with blue ice packs. Occasionally it is necessary to store the samples in a refrigerator for one or more days. In this occurrence it is important to place a custody seal on the container(s) to provide the necessary assurance that the sample has not been tampered with prior to shipment to the analytical laboratory. Alternatively a dedicated refrigerator with a lock that is controlled by field personnel who are documented on the COC may be used.

Instruments and equipment that measure a quantity, or which must attain performance at an established level, are subject to calibration. Field equipment used for measurement data collection, such as pH and specific conductance meters, will be calibrated against appropriate standards prior to field use. Calibration data will be recorded in the field logbook, even if it is also recorded in an equipment logbook.

The final QA/QC step is verifying data records. At the conclusion of each sampling event, the sampler reviews the field documentation to ensure that the appropriate data has been documented

and that the ARF and COC documentation are in agreement. The following observations and field data are checked for transcription errors or other anomalies:

1. Field designation of the monitoring well locations;
2. Method of sample collection;
3. Date and time of collection and weather conditions;
4. Unusual field conditions observed;
5. Field parameter measurements; and
6. Names of personnel involved with the sampling activities.

5.3 Field Documentation

Proper field documentation is essential to insure accurate recording of field measurements, and also provides the necessary framework to ensure that the sample collection methodologies are defensible. Field documentation allows for future review of sample collection procedures, as well as sample handling and possession from the time of collection through completion of laboratory analysis. Procedures used include a field logbook, sample labels, security seals, a Chain-of-Custody (COC) form and an Analytical Request Form (ARF).

Field Logbook/Form: A detailed record is made of all pertinent information related to the sample at the time of collection. The minimum information required is date and time of instrument calibrations and calibration results, date and time of sample collection, sample name, sample location, name of sampler, types and number of bottles filled and preservatives used, any significant field observations (including water color and clarity, weather), and results of field parameter analyses.

Sample Labels: Sample bottles prepared by the laboratory will be used for samples that are collected for laboratory analysis. Prepared bottles should be pre-labeled by the laboratory with color-coded labels that identify the type of preservative contained in the bottle.

Using a waterproof writing instrument, clearly fill out the sample label, indicating the date and time of sample collection, sample identification, preservatives used (which should already be indicated on the label by the laboratory), and whether the sample has been filtered prior to preservation.

Security Seals: Seals will be used on each sample shipping container (coolers) submitted to the laboratory to preserve the integrity of samples from the time of collection to the time of analysis. Gummed paper seals will generally be used, and the seal will be signed or initialed and dated. The seal is attached to the sample shipping container, usually a large insulated cooler or similar, in such a way that the seal must be broken to open the container.

Chain-of-Custody (COC): A separate COC form will be included with each cooler and will provide the following information: sample identification, signature of sampler, preservative(s) used, number of containers per sample, signatures of persons involved in the chain of custody, including dates of possession, reference to the ARF (see below) for requested parameters and analytical methods, and method of shipment.

Sample Analysis Request Form (ARF): A separate ARF will be included with each cooler along with the COC. The ARF provides additional information as follows: contact to whom the report is sent, contact to whom the invoice is sent, sample matrix, and the specific analyses and analytical methods being requested for each sample (Attachment 3).

6 Data Verification and Validation

Data verification is necessary to evaluate the completeness, correctness and conformance of the data against the method or procedure requirements. Data validation is necessary to determine the analytical quality of the data and ensure the data received is suitable for interpretation.

Upon receipt, the laboratory analytical data will be subjected to a QC review based on the method performed and using “Functional Guidelines for Evaluating Inorganics Analyses” (U.S. EPA, 1988), as applicable. In addition to assessing the ion balance, the correlation between related parameters (e.g., total anions versus TDS and conductivity), calcium and magnesium versus alkalinity and hardness will also be evaluated. The data validation process also includes a review of holding times to verify that all EPA-prescribed holding times were met, a review of blank sample results as a check for potential sample contamination, and an evaluation of analytical accuracy and precision based on the results of analyses of duplicate and spiked samples, as appropriate and required by the method.

The data validation process utilizes qualifiers to identify quality control problems and potential limitations on the use of the data, if any. During data validation, the data is assigned to one of the following data usability categories; 1) acceptable; 2) acceptable with qualification; or 3) unusable/rejected.

Qualification of data from samples associated with contaminated blanks is applied according to the following guidelines:

1. If a compound is found in a blank, but not found in the samples, no qualification applies;
2. If the sample result is greater than the laboratory reporting limit but less than five times the blank concentration, the result should be qualified for blank contamination (B); and
3. If the concentration of the analyte in the sample exceeds five times the amount detected in the blank, the sample result is reported without qualification.

The results of the data verification and validation will be summarized in the monitoring report.

7 Final Reporting

Upon completion of the data validation and review of the water quality data, a report will be prepared that summarizes the methods and results of the field program for submittal to the BLM, Burns District. The report will include copies of all field documentation, including photographs and sampling forms, as well as laboratory reports and results of the data validation. This report will also include a summary of the water quality data and any recommendations for future monitoring events.

Attachments

Attachment 1
Monitoring Well Location Map and Completion Details

Attachment 2
Low Flow Sampling Techniques

Attachment 3
Analytical Request Forms

Appendix C

Celatom Mine Expansion Habitat Mitigation Plan

Celatom Mine Expansion Habitat Mitigation Plan Appendix C

I. Introduction

EP Minerals, LLC (EPM) submitted a Mine Plan of Operations to expand their diatomaceous earth (DE) mining operations at the Celatom mining area (EPM 2008). The Project Area covers 12,640 acres of which 8,080 acres are administered by the Bureau of Land Management (BLM). There are 1,394.5 acres of proposed disturbance located on public land administered by the BLM. The BLM has analyzed EPM's proposal in an environmental impact statement (EIS) that was distributed for public comment in March 2011.

The general area is comprised of sagebrush steppe vegetation and contains a mixture of greater sage-grouse habitats classified by Oregon Department of Fish & Wildlife (ODFW) as core, low density, and non-core habitats (Hagen 2011a) (Figure 1). Some of the area is also big game winter range. This Mitigation Plan describes mitigation for the impacts from the proposed new mine areas, exploration areas, and associated developments on greater sage-grouse habitat and big game winter range. This Mitigation Plan is based on ODFW's greater sage-grouse mitigation framework (Hagen 2011b). ODFW, EPM, and the BLM worked together to develop this plan.

The Mitigation Plan identifies the facilities and areas to be mitigated and describes mitigation actions and initial locations for mitigation as shown on Figure 2. The Mitigation Plan provides a general timeline for implementation of mitigation projects so that in general, mitigation is in place before, or as the mine and infrastructure development occurs.

The main participants in implementing mitigation for EPM's mine expansion and development are EPM and the BLM. EPM, the proponent will be responsible for the Mitigation Plan, preparation, maintenance, and project implementation. The BLM is the responsible land management agency for the public land portions of the Project Area. The proposed mining on public lands must first be authorized by the BLM. The specific timing, locations, and types of mitigation actions will be approved by the BLM. The BLM will determine when mitigation is successful. The ODFW will provide technical information pertaining to greater sage-grouse and big game habitats, effective measures to mitigate impacts, potential mitigation areas, and will review the results. All three organizations will cooperate and coordinate in the effective implementation of all parts of the Mitigation Plan.

II. Description of the Mitigated Impacts

The proposed mining and associated actions were described in detail in the EIS. The proposed mine plan area occupies Habitat Category 2 sagebrush steppe habitat and big game winter range (R. Hooton, personal communication, August 23, 2011) and is a mixture of greater sage-grouse core, low density, and non-core habitats (Hagen 2011a). All proposed mining development, mine facilities, and exploration activities will take place within the proposed mine plan area. The actions that will be mitigated are mining, exploration, and road building.

Mining: The main activity, mining, includes removal and stockpiling of overburden and top soil (growth media) for reclamation, mine construction, mining, and sorting and stock piling ore and other mined material. There will be material stockpiles in and near mines during the active life of the mines. Once developed it is expected that a mine will have little or no wildlife habitat value for its productive life plus the reclamation period. Mining activities will last up to 50 years followed by final reclamation.

Connector Road Construction: A new road will be constructed from the Section 36 Mine Area to the Hidden Valley Mine Area providing access to Hidden Valley and the Eagle Mine Area. The road will be an unimproved road 1.75 miles long and 25 feet wide with wider areas in places to allow passing vehicles. During active mining or reclamation, the road will receive daily use.

Exploration Drilling and Bulk Sampling: EPM plans to continue exploration drilling and bulk sampling on 250 acres throughout the Project Area in order to develop additional reserves on federal land. This will include two or more monitoring wells upgradient of the proposed North Kelly Field Mine and Eagle Mine. Exploration could occur anywhere in the Project Area and may overlap with mine-related disturbance. Once drilling indicates the presence of a sufficient quality and quantity of ore, a bulk sample of the material will need to be excavated and processed to verify marketability of the finished product. Drill sites, access, and bulk sample sites will be reclaimed in the fall of each drill season, weather permitting

III. Calculation of the Size of the Mitigation Area

The habitat mitigation area must be large enough to achieve, within a reasonable time, the habitat mitigation goals and standards of the ODFW's Fish and Wildlife Habitat Mitigation Policy (OAR 635-415-0025). For Habitat Category 2 impacts, ODFW recommends mitigation to achieve "no net loss" and a "net benefit" in habitat quantity or quality. The Project Area is Habitat Category 2 sagebrush steppe habitat and big game winter range. The "mitigation acres" in the following table were calculated in coordination with ODFW.

The size of the mitigation area was calculated for the surface disturbance in each mine area. The acres of surface disturbance for mining and exploration came from the EIS, Table 3.2-1. Each proposed mine was buffered using the formula in Table 3 in the Sage-grouse Mitigation Framework (Hagen 2011b). Where disturbance area buffers overlapped, an area was only counted once in calculating the size of the mitigation area. The Hidden Valley Mine, Eagle Mine, and the Connector Road buffers overlapped. A single buffer area was calculated for all three actions. When an existing mine fell within a buffer, the area of the existing mine was subtracted from the buffer.

Exploration activities may occur anywhere within the Project Area. The need, timing, and location of exploration are unpredictable. The 250 acres of exploration and bulk sampling are authorized during the 50 year life of the plan.

Mining Activity	Disturbed Acres*	Mitigation Acres
Hidden Valley	255	255
Eagle	286	286
Connector Road	6.5	6.5
Table 3 Buffer**		2,889
North Kelly	462.5	462.5
Table 3 Buffer**		1,419
Exploration	250	250
TOTAL	1,260	5,568

*The disturbed acres are from Table 3.2-1 in the EIS.

** Calculation based on Table 3 in Hagen (2011b).

The grand total mitigation area for the proposed mine expansion is 5,568 acres.

IV. Description of Initial Mitigation Areas

The ODFW Mitigation Policy recommends mitigation for Habitat Category 2 impacts to be “in proximity” to a project, and the mitigation area should be located where habitat protection and enhancement are feasible consistent with this plan. With the exception of roadside weed spraying, mitigation measures will not generally be implemented inside the mine plan area. Mitigation actions will primarily occur on BLM lands, but could also occur on State of Oregon or private land owned, or secured for the purpose of mitigation, by EPM.

For the Celatom mine expansion project, ODFW’s initial priority mitigation area is north and west of the proposed mine plan area to benefit the Birch Creek greater sage-grouse lek complex. The two Birch Creek leks are the closest to the mines. The initial mitigation area includes sagebrush steppe habitats from the north end of the mine plan area to the Burns District Boundary and west and north until the vegetation changes to ponderosa pine forests. The initial mitigation area contains juniper encroachment and medusahead invasion of sagebrush steppe plant communities.

V. Mitigation Actions

The goals of mitigation actions in this plan are to maintain and improve sagebrush steppe plant communities in the Celatom mine area, and to reduce the risk of wildfire in sagebrush steppe plant communities so they can provide greater sage-grouse habitat and big game winter range. A vegetation mix that includes healthy later successional sagebrush steppe plant communities provides most of the habitat needs for greater sage-grouse and is a component of big game winter range. When sagebrush steppe degrades to a medusahead fire cycle plant community, most, if not all, of its value as greater sage-grouse habitat or big game winter range is lost. Juniper encroachment diminishes and eventually eliminates greater sage-grouse habitat values. The three main threats to greater sage-grouse habitat in the Project Area are juniper encroachment, medusahead invasion, and the subsequent changes in wildfire regime that result from these vegetation changes. Medusahead invasion and changed wildfire regime also threaten big game winter range values. The mitigation measures address these issues.

1. Juniper control. The objective of juniper control mitigation projects is to remove all encroaching juniper from treatment areas. This will release understory plants especially grasses and forbs. Juniper removal also allows sagebrush to continue to be the dominant shrub species.

There are situations within the mitigation area that will necessitate different approaches to disposing of the cut juniper. The mine area is in the elevational transition zone between Wyoming big sagebrush and mountain big sagebrush. Broadcast fire is not appropriate in Wyoming big sagebrush communities, but could be used in mountain big sagebrush communities. Since the reason for mitigation is the loss of sagebrush, broadcast burning as part of this project is unlikely. Medusahead should not be burned. In treatment areas with widely scattered junipers they will be cut, lopped, and scattered. Denser juniper will be cut and piled. The piles may be offered for firewood and eventually burned. The burned spot may or may not need to be seeded. These determinations will be made for each mitigation project. Juniper control as part of this plan will include two treatments; cutting and disposal. Once these steps are completed, the mitigation project will be accomplished.

2. Medusahead and other noxious weed control. The objective of weed treatments is to control or remove noxious weeds from treatment areas to maintain or increase the resilience of the native plant communities. There are infestations of several noxious weed species within the mitigation area, but the biggest threat to ecosystem values and the most extensive is medusahead. While medusahead is the focus of mitigation, treatments of other noxious weeds are acceptable mitigation. The most common treatments will be ground spraying of roadsides and moderate and small infestations with herbicides. Aerial treatment of larger areas of medusahead could occur where determined to be the most efficient and effective approach. All herbicide use will comply with current BLM and State of Oregon regulations and policies related to the use of herbicides. In general the plant communities in the Project Area contain the expected native species plus medusahead. As a result treating the medusahead with selective herbicides is expected to favor the competing desired native species.

A medusahead control project is two to four years of treatments. Currently the preferred herbicide is imazapic which has residual effect for up to two years. Medusahead is an annual so each year's plants come from seeds. There is medusahead seed in the soil seed bank. Several years of treatments will control the germination of seeds in the soil seed bank plus new seeds depleting the seed bank. The target for medusahead treatments is the composition of the treated plant community is five percent medusahead or less.

There are a few areas where medusahead dominates the site to the point that reseeding is required post weed control. Reseeding can be a mitigation practice. Based on current conditions reseeding is expected to be uncommon. The seed mix will be determined on a case-by-case basis. It will be based on the applicable ecological site description(s) and the status of the plant community. Reseeding will count as acres of mitigation. In other words, if 50 acres of medusahead is treated and reseeded this equals 100 acres of mitigation. Seeding is a difficult, complex, and costly undertaking. It will cost much more than twice as much as spraying an equal area, so the plan provides this small incentive for reseeding. The duration of a seeding project will be a project specific determination.

Successful implementation of juniper and medusahead control will leave the subsequent plant communities more resistant to large scale fires and more resilient to future invasions by undesirable species. Following mitigation, these sagebrush steppe plant communities will be better able to provide greater sage-grouse habitat and big game winter range values.

VI. Mitigation Schedule

The goal is to implement mitigation prior to new mine development. However to start, mitigation and mine development can occur simultaneously. EPM needs to budget mitigation costs. EPM, ODFW, and BLM will develop a mitigation schedule for the first ten years of mine expansion. This schedule will be completed by April 1, 2012.

The purposes for the schedule include balancing mitigation practices, mine expansion impacts, costs, and planning. The mitigation schedule is flexible. For example, a wildfire could burn a planned juniper control project. The mitigation schedule will be modified to account for the fire.

It is not expected that a mine or disturbance will be mitigated in a single year or treatment. There may be economies of scale that can be realized by doing groups of mitigation projects. The mitigation projects can be completed before the end of a mine's productive life. Juniper control on BLM lands in ODFW's initial preferred mitigation area can begin in the summer 2012, post greater sage-grouse nesting. Medusahead herbicide treatments could begin in fall 2012, when they will be more effective. Control of other noxious weeds can begin in 2012.

VII. Monitoring

Monitoring will indicate whether the mitigation was implemented, if it was effective, and if it achieved the goals and objectives. The goal of the mitigation projects is to maintain and improve sagebrush steppe plant communities in the area of the Celatom mines so they can provide greater sage-grouse habitat and big game winter range. The objective is to maintain or improve the condition of native plant communities by removing encroaching and invasive plants. Implementation monitoring will be an annual Mitigation Report submitted to BLM and ODFW each December by EPM describing what mitigation was completed, including materials, methods, cost, locations, and area during the previous field season.

Effectiveness monitoring may be conducted by any of the three participants, but is EPM's responsibility to ensure monitoring is completed. The BLM conducts lek counts each spring and the BLM will continue this monitoring and the data will be used in evaluating mitigation effectiveness. Upon selection of a mitigation project, photo monitoring will be established that shows plant composition and ground cover to monitor the effects of the treatment(s). Quantitative species composition monitoring will be established for each mitigation project. The method and intensity of monitoring as well as the timing, frequency, and duration of monitoring will be determined based on the specific project's objectives and treatments. Copies of each year's monitoring will be submitted with the annual Mitigation Report. Monitoring data will be compared to the site's ecological site description and the treatment objectives to determine success. Some amount of mitigation monitoring will continue for the life of the mine plan.

Periodic evaluation of implementation and effectiveness monitoring will be used to evaluate the overall success of mitigation and if or what kinds of adjustments are needed.

VII. Evaluation and Adaptive Management

In February 2015, there will be an evaluation meeting with ODFW, EPM, and the BLM. While cooperation is preferred, the BLM is responsible for the evaluations. The purpose for this meeting is to evaluate mitigation to date. After 2015, mitigation will be evaluated on at least five year intervals. The purposes of the evaluations are to determine whether EPM is adequately implementing the mitigation plan; whether the mitigation is successful or is on a trend toward success; and whether the mitigation is meeting or is on a path to meet the mitigation goals and objectives.

As new information becomes available, the goals and objectives can be reevaluated and modified as needed. The Mitigation Plan changes will be based on monitoring data and the evaluations.

This mitigation plan can be changed by agreement among the participating parties. This Mitigation Plan and any changes will comply with BLM and ODFW regulations and policies. As

the land manager, the BLM is responsible for ensuring that mitigation achieves the mitigation goals.

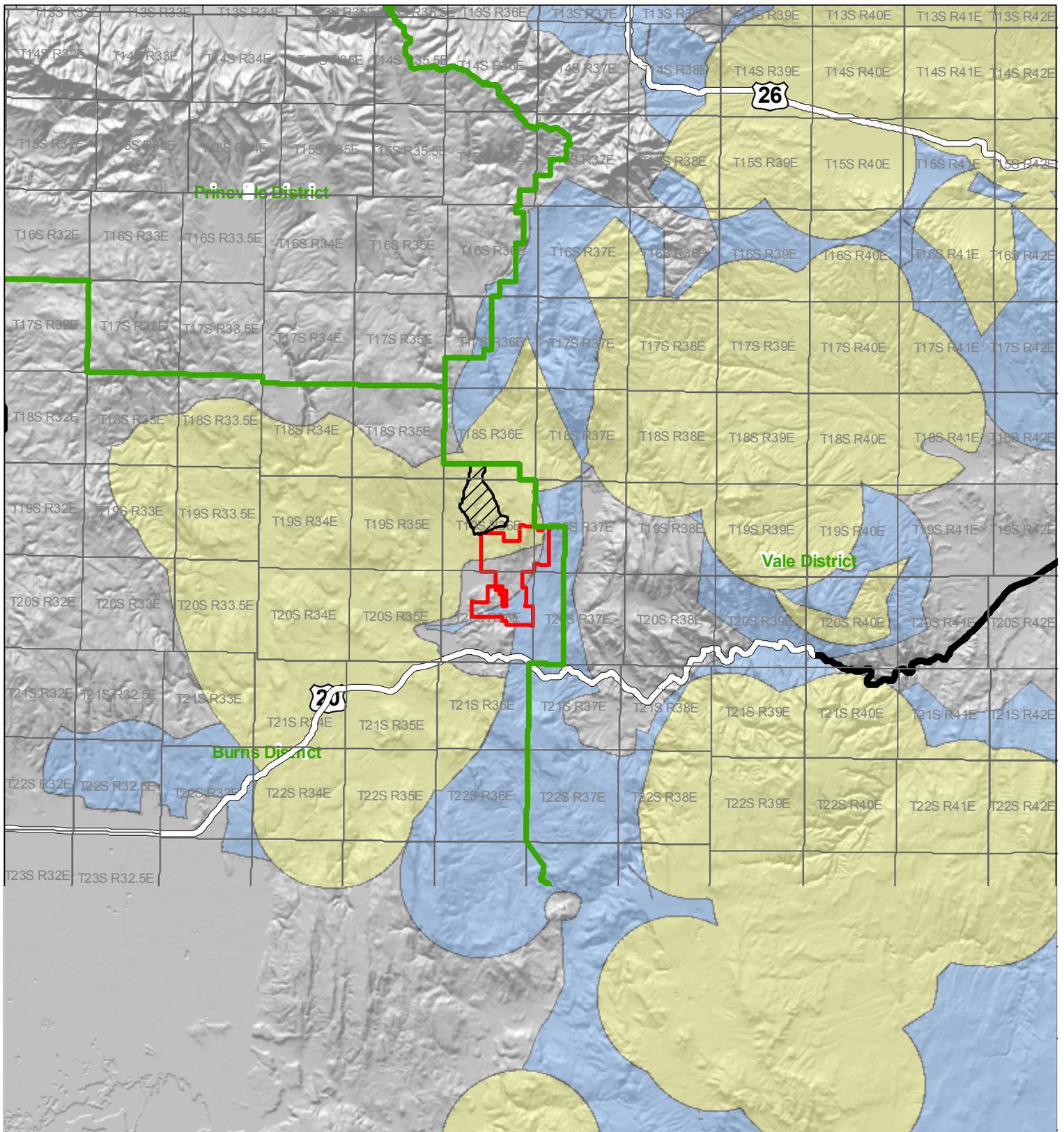
CITATIONS

EP Minerals (EPM). 2008. *Mine Plan of Operations for the EP Minerals Celatom Mine Expansion Project*.

Hagen, C.A. 2011(a). *Implementing Habitat Mitigation for Greater Sage-grouse Under the Core Area Approach*. Oregon Dept. of Fish and Wildlife, Salem, USA.

Hagen, C.A. 2011(b). *Greater Sage-grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat*. Oregon Dept. of Fish and Wildlife, Salem, USA.

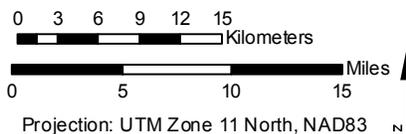
Hooton, R. 2011. Personal Communication. Klamath/Malheur Watershed District Manager, Oregon Dept. of Fish and Wildlife, Bend, Oregon.



Explanation

-  Project Boundary
-  Mitigation Area
-  Highway
-  BLM District Boundary
-  Township and Range
- Greater Sage-Grouse Habitat (Hagen, 2011b)**
-  Core Area
-  Low Density

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.



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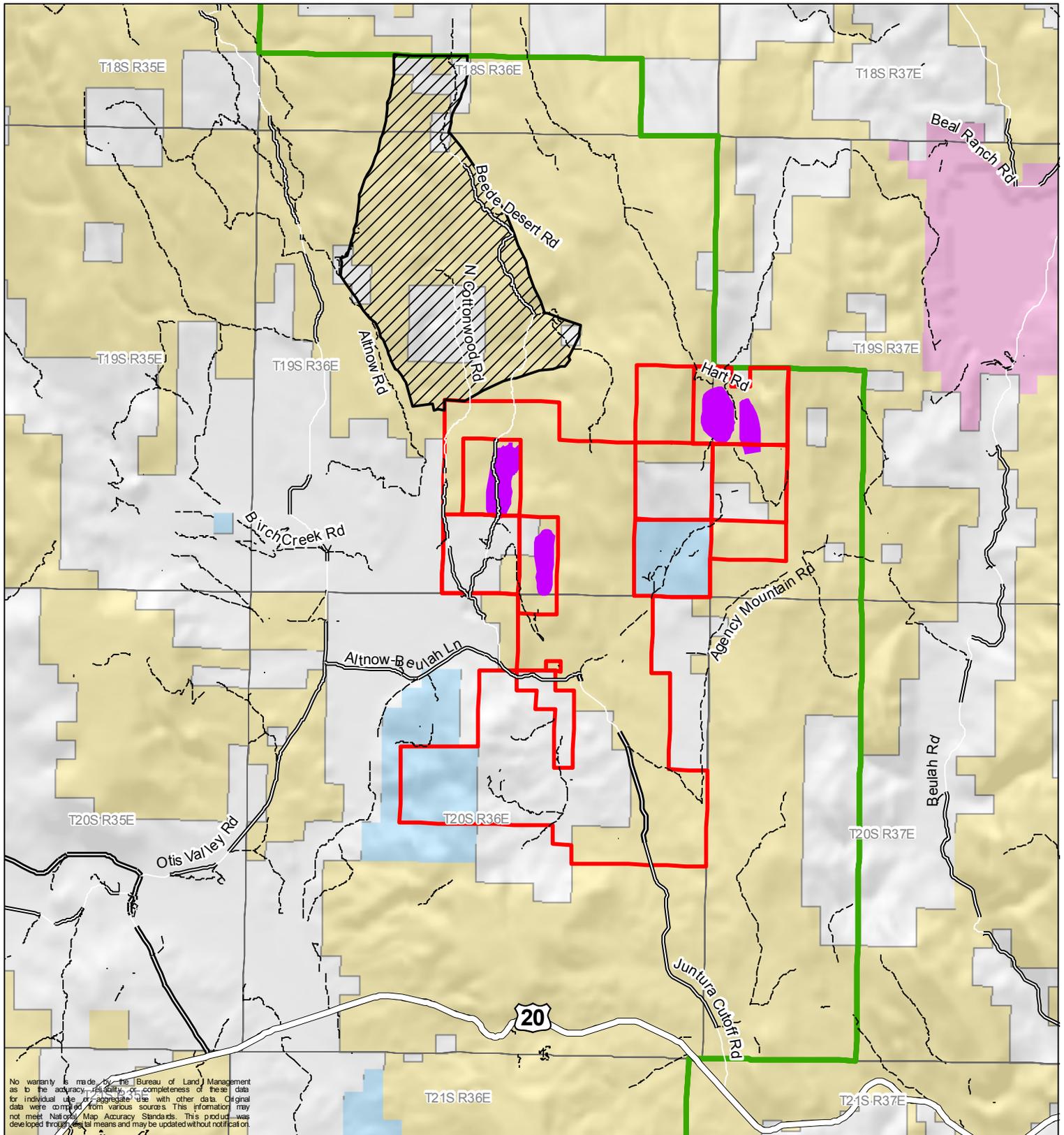
BURNS DISTRICT OFFICE
28910 Highway 20 West
Hines, Oregon 97738

CELATOM MINE EXPANSION PROJECT

Sage Grouse Mitigation Plan

Figure 1

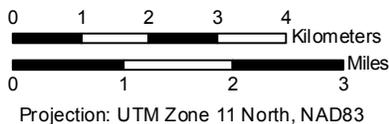
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Explanation

- ▭ Proposed Project Boundaries
- ▭ Proposed Pits
- Mitigation Area
- ▭ BLM District Boundary
- Highway
- Paved Road
- Non-Paved Improved Road
- Natural/Unknown Road Surface
- Bureau of Land Management
- State
- Bureau of Indian Affairs
- Other Federal
- Private/Unknown



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CELATOM MINE EXPANSION PROJECT

Sage Grouse Mitigation Plan

Figure 2

12/19/2011

Appendix D
**Responses to Public Comment Letters and Public
Comment Letters**

Celatom Mine Expansion EIS
Response to Comments

Commentor	Comment #	Name	Comment	Response to Comment
Letter A	A-1	The Environmental Protection Agency	<p>The Environmental Protection Agency (EPA) has reviewed the draft EIS for the proposed Celatom diatomaceous earth mine expansion located in Henry and Malheur Counties, Oregon. Our review was conducted in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and section 309 of the Clean Air Act. Under our policies and procedures, we evaluate the environmental impact of the proposed action and the adequacy of the impact statement.</p> <p>The current mine involves three open pits and the proposed expanded mine life is 50 years. The total acreage of existing and expanded disturbance encompasses 8,155 acres of BLM land, 1,280 acres of state land, 1,640 acres of private land, and 1,600 of private surface estate. The proposed mine areas are referred to as the North Kelly Field, Hidden Valley, and Eagle Mine. The DEIS analyzes the no action alternative and two action alternatives: Proposed alternative 2 and Proposed Alternative 3 with additional design elements. The additional design elements include restricting mine access, maintaining and developing stock water ponds, and removing a sediment basin.</p> <p>The DEIS clearly describes the regulatory framework of each resource area; however, there is a lack of information on key components such as monitoring, basis for environmental predictions, mine reclamation, financial assurance and groundwater and surface water impacts. Due to this lack of information and concerns associated with impacts to water resources we have assigned a rating of EC – 2 (Environmental Concerns – Insufficient Information) to the Draft EIS. Our discussion of these issues is below. Please see attachment 1, EPA's specific comments, for additional questions and recommendations.</p>	<p>In general EPA made comments related to the source and analysis of surface and ground water quality, hydrology, and mineral information and analysis. EPM contracted SRK Consulting (U.S.), Inc. (SRK) to study these resources. This report, "Baseline Characterization Report for Celatom Mine Drewsey, Oregon" is available at the Burns BLM Office during normal business hours or online at http://www.blm.gov/or/districts/burns/plans/index.php. SRK 2010a provides baseline information plus some analysis and interpretation of climate, geology, surface water occurrence and quality, ground water occurrence and quality, geochemistry, and acid rock drainage characteristics, potential hydrologic impacts, and pit lake potential for the Celatom Mine area. This report is quoted and cited throughout the FEIS. FEIS parts 4.3 and 4.15, "geology and minerals" and "water quality and quantity," respectively, were more or less copied from this report. Under the 1984 MPO EPM did not conduct surface water monitoring, because there were no perennial streams and little permanent water within the 1984 MPO boundary. SRK (2010a) collected water quality data from pits, springs, and creeks in and near the 2008 CMP area including Altnow ditch and Cottonwood Cr both west of the project area (FEIS 4.15.2.3.1). The Final EIS, includes surface and ground water monitoring, Appendix B, which was excerpted from the 2008 CMP and uses SRK (2010a) as the baseline. Although the monitoring plan was discussed in the DEIS, it was added to the FEIS as Appendix B.</p> <p>There is bonding in place with BLM and DOGAMI for the existing mining. BLM bonding is being recalculated in compliance with the applicable sections of 3809.552 - 3809.582 for the proposed mining. Bonding is outside the scope of this decision. Bonding is not discretionary so there are not options to analyze under NEPA. Mine reclamation is discussed in the FEIS, as part of the proposed action (3.2.10-12) and in vegetation (4.13.3). Interim reclamation (FEIS 3.2.10.4) is the same thing as concurrent reclamation (43 CFR</p>

Celatom Mine Expansion EIS
Response to Comments

Commentor	Comment #	Name	Comment	Response to Comment
	A-2		<p>The EIS briefly states that monitoring will be required and refers to Appendix 62 of the Mine Plan Operations (MPO). This section of the MPO is not included in the EIS and is only available in person. Therefore, it is not readily accessible for review. Because of this we are unclear about the specifics of a monitoring plan.</p> <p>The NEPA analysis should describe project monitoring in some detail. We recommend as a general rule that the level of effort afforded monitoring be commensurate with the complexity of the project and the risk to and sensitivity of the effected environment if a project is permitted and/or approved. As a first step, we recommend that the NEPA analysis clearly define the goals and objectives of monitoring, and present and overall monitoring strategy for the project. Second, the NEPA analysis should provide enough detail on the monitoring program for reviewers to evaluate whether the goals and objectives of monitoring will be achieved. This can generally be satisfied by providing summary information on monitoring (including a list of measurement parameters, methods, locations, frequency, data analysis, and reporting). In addition, we recommend that alternatives include clear requirements for regular analysis and reporting of data to oversight agencies, and include a requirement that the operator submit a full sampling and quality assurance plan for agency approval. The NEPA analysis should discuss who will conduct monitoring, the frequency and how monitoring will direct management decisions. Please provide this information in the final EIS.</p> <p>We also recommend that the final EIS include past monitoring data from current operations and discuss the sources of elevated levels of water quality parameters or impacts to other resources, using data collected by the company and agency inspections during operation of the existing mine. The final EIS should also disclose any issues encountered from implementing the plan and how they were addressed, which will inform future monitoring.</p>	<p>The Monitoring Plan, which includes periodicity and responsibilities, has been added as Appendix B in the Final EIS. The Monitoring Plan was excerpted from the CMP and is part of the proposed action. The existing ground and surface water chemistry and predicted impacts to ground and surface water quality were described and analyzed in SRK (2010a). Pertinent information from the SRK (2010a) report is in Sections 4.3 and 4.15 in the FEIS. In the FEIS these sections were revised in an effort to address EPA's comments and more thoroughly analyze water quality. Reporting requirements for the mine are determined by federal regulations, Oregon statute, and terms in the CMP. The Federal and State requirements would not be changed by a decision on this project. The proposed CMP is available at the Burns BLM Office during normal business hours or online at http://www.blm.gov/or/districts/burns/plans/index.php. Surface water quality data due to existing mines is shown in FEIS tables 4.15-1 through 4. Ground water quality from existing mines is shown in FEIS tables 4.15-5 and 6. SRK (2010a) found similar values and OR MCL exceedences above and below current mining. This indicates that they are due to the geology of the area, not the mining.</p>

Celatom Mine Expansion EIS
Response to Comments

Commentor	Comment #	Name	Comment	Response to Comment
	A-3		Throughout the EIS there are conclusive statements about water quality impacts; however, the source basis of these predictions is unclear. The following are examples where we have concerns with the clarity of information in the EIS related to surface water and groundwater.	As described above and below, the FEIS has been updated to address EPA's comments.
	A-4		<p>Surface Water – Section 4.15.1 notes that the primary cause of water quality degradation on public land is from non-point sources causing sediment and temperature increases. Section 4.15.3.3.2 includes three sentences about impacts on surface water and one briefly states that there would not be any impacts. It is not clear what the basis of this statement is. The EIS does not include and numerical data or information on modeling. Furthermore, the list of parameters in Table 4.15-3 for surface water quality does not include temperature or total suspended solids as measured criteria. These are standard criteria and should be included in the analysis of water quality impacts. The EIS should include predicted values and reference to specific scientific research and/or explanation with modeled predictions.</p> <p>We understand from the EIS that this region is semi-arid and that many streams may be either intermittent or ephemeral. However, the EIS does not clearly describe the setting and presence of surface water in the project area. We believe that the contribution of small, intermittent, and ephemeral streams to the overall watershed should be considered in the analysis. The section on surface water features only includes a short description of Altnow Reservoir; however the section on hydrology includes a list of tributaries draining to larger order streams in the project area, which are not discussed under surface water features. There is also no discussion of water quality impaired streams in the project area. The EIS should more fully discuss the presence, sizes and quality of the water in the project area.</p>	As described in FEIS 4.15.2.3.1 and chapter 2 for each existing pit, every effort is made to keep surface water at the mines. Monitoring shows that surface water is being kept at the mines. There is no indication that surface mine runoff reaches Altnow ditch or reservoir (FEIS tables 4.15-3 and 4). The only water quality parameter for Altnow ditch and reservoir that does not meet OR MCLs is pH (FEIS table 4.15-3). Both are basic. The concern with the mines is acid drainage. Below Altnow Reservoir Warm Springs Cr crosses approximately 5 1/2 miles of private, mostly irrigated hay fields, before entering the Malheur River. Monitoring of several springs and pit water was added to the FEIS, Appendix B. As stated in the DEIS and FEIS there are no perennial streams in either CMP area. Any water that flows off the CMP area flows into Altnow Reservoir (FEIS Figure 4.15.1). Monitoring data for Altnow Reservoir is in FEIS table 4.15-3. There is no discussion of water quality impaired streams in the project area because there are none. The monitored streams and seeps (FEIS tables 4.15-1 and 3) all complied with the OR MCL for "total dissolved solids." Water temperature has not been monitored by EPM because water does not flow off the CMP area during the summer, and downstream of the project area potential impacts to temperature in Warm Springs Cr and Cottonwood Cr from mining are completely

Celatom Mine Expansion EIS
Response to Comments

Commentor	Comment #	Name	Comment	Response to Comment
	A-5		<p>Groundwater- One of the major issues associated with this mine is the presence of acid generating material (unoxidized diatomite). Throughout the document there are multiple instances stating that there would not be a pit lake at the end of mining due to mining above the water table and there are statements that mining could occur below the water table at the Kelly Field pit. There are also instances where the document states that if there is mining below the water table that a mine pit lake would not occur due to evaporation (82 gpm) exceeding inflow (50 gpm). The document discusses the location of shallow groundwater and process for backfilling pit to reduce migration of contaminants and increase evaporation of a pit lake. The document is very confusing to follow regarding mine operations, groundwater characterization and impacts. There is no disclosure of the probability of the various scenarios and therefore, it is not clear how likely it is that mitigation could occur.</p> <p>Additionally the EIS states that the current conceptual model shows that mitigation would only be possible in the proposed pits east of the Upper Mill Gulch Fault; however, the EIS does not discuss which mine areas would exist in this vicinity. The DEIS lacks justification for this statement and it seems to conflict with the prediction of no impacts to groundwater. We recommend that the final EIS clearly and concisely characterize all of the open pits in one section disclose the probability of various scenarios, and provide reference to predictions of potential groundwater impacts.</p>	<p>FEIS 3.2.10.8 identifies that the only pit with the potential to contact ground water and develop a pit lake is the proposed North Kelly Field West Pit. As explained in FEIS 4.15.2 this is the only proposed or existing pit that may intersect the water table. This is where the engineered backfill would be used to prevent formation of a pit lake and movement of pit water into the ground water (FEIS 3.2.10.8.2). As a result North Kelly West Pit is the only mine where such ground water mitigation might be needed. All other existing and proposed pits are above the water table and there is no possibility of pit lake formation or rain or runoff percolating through the floor of the pit to the water table. The mines in Mill Gulch (Sec. 36, Kelly Field, and N Kelly Field) are closer to the water table. The other mines, Beede Desert, Hidden Valley, and Eagle are far above the water table (FEIS 4.15.2.3.2). Test wells in Hidden Valley were totally dry. There are not various scenarios. Each pit has different geologic characteristics. Beede, and Hidden Valley have only oxidized diatomite, so acid generation from the mixing of sulfides and water can not occur. Below the oxidized diatomite in the Eagle, N Kelly Field, Kelly Field and Section 36 pits, transition and unoxidized diatomite may be encountered (FEIS 4.3.2.2.1 & 4.3.2.2.5 & 4.3.3). FEIS table 4.15-4 shows that rain/snowmelt water in contact with unoxidized diatomite can be very acidic (pH 3.1 - 4.2). If water collects in the bottom of a pit EPM pumps it into a sediment basin. Table 4.15-4 also shows that the pH of the sediment basins is approximately neutral (pH 7 and 7.6). FEIS sections 3.2.10.8.1 and 4.15.2.3.1 and 2 were</p>

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	A-6		<p>The EIS describes the reclamation plan and states that backfilling of open pits would occur and that disturbed areas would be re-contoured or re-graded and planted to reestablish native vegetation communities. The EIS should also discuss how waste material would be handled prior to revegetation and if there is preferential handling of unoxidized material and plant processing waste. The EIS should disclose whether or not there is a risk of leaching from vegetated dumps during high run off or precipitation events.</p>	<p>FEIS 2.4 explains generally how interbedded waste, low quality diatomite, and mill waste are managed at the mine. FEIS 2.5 describes waste handling at each of the existing pits. For each proposed mine management of stockpiles, including waste, is described in FEIS 3.2.2 in the part about each proposed mine area. FEIS Tables 4.15-2 and 4.15-4, water chemistry from a stock pond in an unmined area and two sediment ponds below mine areas, respectively, show that if there is movement of surface water off stockpiles it does not change the chemical composition of that water immediately below the stock pile. Ground water monitoring wells, FEIS table 4.15-6, show that if there is subsurface water movement from stock piles or mines it is not changing water chemistry at monitoring wells. This monitoring suggests that runoff from stock piles does not leave the site of the stock pile. As a result stock piles can be handled similarly.</p>
	A-7		<p>This mine is known to contain acid generating material. This can be a major environmental risk if conditions create an acid rock drainage scenario (e.g., groundwater inflow or high precipitation event). The EIS discusses the pit walls of the Kelly Field and existence of acid generating material but there is not the same discussion for the other mine areas. Also, the EIS does not clearly explain what the reclamation of the current pit lakes is, which have measured low pH. The previous Environmental Analysis was completed in 1985. We strongly recommend that the final EIS evaluate mine closure as a whole and consider more current information and operating procedures when finalizing the detailed reclamation plan.</p>	<p>Hopefully the FEIS clears up these mistakes. The specific sections and sources were noted in previous sections of this appendix. The other mines do not have unoxidized diatomite exposed in pit walls, so it is not exposed to rain or runoff. The water in the Kelly Field mine that was very acidic was snow melt/runoff in the bottom of the pit. This water is pumped into a sediment basin. Sampling of the sediment basins and monitoring well data shows this acidity does not migrate from the pit. FEIS 3.2.2 includes pit dewatering for each proposed pits on BLM. Evaporation has always been enough to keep Beede Desert dry. It is anticipated that for the adjacent proposed pits, Hidden Valley and Eagle, evaporaton will keep them dry (FEIS 3.2.2.3.6 and 3.2.2.4.5) Surface and ground water monitoring shows that the EPM's mining is not changing water chemistry immediately or further downstream from existing mines. There is not a pit lake. The one proposed pit that might intersect the water table, North Kelly West Pit, includes the engineered backfill designed to prevent formation of a pit lake and create a ground water sink so ground water moves into the pit and not the other direction. The proposed MPO including the complete recalamtion plan was written in 2008. The SRK (2010a) report, the source of the water quality and chemistry data and analysis was completed in 2010.</p>

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	A-8		<p>The EIS does not include any details regarding financial assurance, which we recommend in our scoping comment letter dated October 9, 2008. NEPA provides for the disclosure to the public and decision-makers all information concerning environmental consequences of a proposed action before the decisions are made and before actions are taken. NEPA does not directly refer to disclosure of financial assurances. However, a key component to determining the environmental impacts of a mine is the effectiveness of closure and reclamation activities, including long-term water management. The amount and viability of financial assurance are critical factors in determining the effectiveness of reclamation and closure activities and, therefore, the significance of the environmental impacts. The final EIS should include details about the bond mechanism and a range of costs so that there is a context for understanding the cost of ensuring that the mine is appropriately reclaimed and closed. We are available and willing to explore this issue with you more and we welcome any information you have related to the <u>existing bond and proposed estimate</u>.</p>	<p>See A-1. It is BLM policy that bonding calculations are not part of the decision on a proposed mine plan or accompanying NEPA analysis. Bonding is required (43 CFR 3809.552 - 3809.582) and formulaic. There are not choices that lend themselves to NEPA analysis. Due to the changing status of the several mines and concurrent reclamation, BLM's goal is to review EPM's bonding annually.</p>
	A-9		<p>Section ES-6. The brief summary of geochemical characteristics only discusses the Kelly Field. This occurs throughout the document while other pits contain unoxidized material as well yet their impacts are not disclosed. We assume that this is because Kelly Field may be the only pit that could be mined below the water table; however, it is not clear what the fate and transport of contaminants from the other proposed and current pits that contain acid generating material (e.g. low pH data in Table 4.15-4). Please discuss the geochemistry of the other pits including pit walls in detail and their potential environmental impacts.</p>	<p>As describe previously in this appendix, hopefully the applicable sections of the FEIS have been modified enough to clarify these comments. Each pit has different characteristics. Kelly Field is the only existing mine with exposed unoxidized diatomite in the pit wall. North Kelly West Pit is the only pit that might be mined below the water table. Kelly Field does not and will not intersect the water table. Surface and ground water monitoring shows that water chemistry at any location below all existing pits is within the range of water chemistry at unmined and upstream sample sites.</p>
	A-10		<p>Section 3.2.11.3. The EIS discusses mine reclamation and pit backfilling and states that Kelly Field could have "an engineered partial backfill as described in Section 3.2.4." However, Section 3.2.4 was not included in the document nor was available on the online version. Please include <u>this information in the EIS</u>.</p>	<p>The North Kelly Field West Pit engineered backfill is described in FEIS 3.2.10.8.2.</p>
	A-11		<p>Section 3.2.11.8.2. The first paragraph states that Kelly Field would not be mined below the water table. The second paragraph states that the Kelly Field could be mined below the water table. Please clarify whether or not it is reasonably foreseeable that the Kelly Field would be mined below the water table. Furthermore, the analysis should include a reasonably foreseeable worst case scenario regarding the potential impacts from mining any pit below the water table and what reclamation or post closure activities would be required to protect the environment.</p>	<p>As described and cited in previous sections in this appendix, Kelly Field is not and will not be mined below the water table. The proposed North Kelly Field West Pit may be mined below the water table. NEPA does not require a "worst case analysis." The potential impacts of mining below the water table in the N Kelly W pit have been analyzed and resulted in mitigation that includes an engineered partial backfill as described in FEIS 3.2.10.8.2.</p>

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	A-12		Section 4.3. This section describes the geology and minerals of the project site. It would be helpful if there were figures illustrating the geologic strata with depths. Please include this in the final EIS.	The geology of the project area is described in SRK (2010a) part 3.3 including Figure 3-2 "Celatom Geology Map." While the geology of diatomaceous earth deposits is conceptually simple, when intermixed with faults, faulting, and several lava flows (FEIS 4.3.2.2.1 and 2 and 4) the geology of each pit becomes difficult to predict. This is illustrated by the slope failures in Kelly Field (FEIS 4.3.2.2.4), the need for test drilling in active mines (FEIS page 2-1), and the unique mixtures of diatomite encountered in the existing mines. Since the strata contacts, angles, and intrusions, and the presence of interbedded seams are conjecture before a pit is developed a figure as requested would be at best generalized and at times wrong.
	A-13		Section 4.15 Water Quality. The EIS included figure 4.15.1, which illustrates water resources in the project area. It would be helpful if this figure also included a layer illustrating current and proposed mine operations so that the reviewer can understand proximity of the mine operations to water resources. Please include a figure with both of these layers in the final EIS.	FEIS Figure 4.15.1 uses an aerial photo as a background. The existing mines are labeled. The proposed mine areas are labeled and delineated by purple horizontal lines. All the surface and ground water monitoring sites within and near the proposed MPO area are shown.
	A-14		Section 4.15.2.1. Throughout the document there are instances where the information presented is vague and connections to previous sections are not made. One example is the following sentence on Pg 90, "The basic issue is that one of the proposed pits may be excavated below the water table..." We assume this is referring to the Kelly Pit although this is not clear and we strongly recommend practicing redundancy particularly when discussion significant issues such as acid rock drainage.	FEIS Section 4.15.2.1 now says, "... one of the proposed open pits (North Kelly Field West Open Pit) may be excavated to elevations below the water table,"
	A-15		Section 4.15.3.4. The EIS discusses groundwater interaction with the Eagle Mine and Hidden Valley and states that low K values for diatomite pit walls and floor would minimize seepage. The EIS should include what the K values for hydraulic conductivity are and provide the basis for the conclusions that seepage would be minimized and by how much.	K values are shown in FEIS Figure 4.15.7 and Table 4.15-7. The ramifications of these to mining and mine closure are discussed in FEIS 4.15.3.4 and 5. As stated earlier this analysis and modelling is in SRK 2010a which is now available on the Burns BLM website and at the Burns BLM office. Sections of the SRK (2010a) report are summarized in this FEIS.

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Letter B	B-1	Oregon Natural Desert Association	Please accept this letter as public comments on the Draft Environmental Impact Statement (DEIS) for the Celatom Mine Expansion Project, a project proposed on sensitive desert lands in Eastern Oregon. The Oregon Natural Desert Association (ONDA) is a non-profit public interest organization of approximately 1,500 members. Its mission is to protect, defend and restore the health of Oregon's native deserts. OND has a long history of interest and involvement in public lands management with respect to wilderness, grazing, riparian areas, water quality, and protection of imperiled fish and wildlife species and their habitat.	
	B-2		The Proposed action will create unnecessary and undue degradation, and permanent impairment to public land resources that have not been fully documented in the DEIS.	The Mining Law of 1872 confers a right to mine a valuable mineral deposit as authorized under 30 USC 22, et seq (which is the Mining Law) and as defined under substantial case law. That right to mine is a property right guaranteed by the Fifth Amendment of the United States Constitution. The 3-Rivers RMP identified the Celatom Mine area as open to mining. The 1980 OR wilderness study area decision, adopted by the 3-Rivers RMP identified that the proposed MPO area did not have wilderness character and did not establish a WSA in this area. The FLPMA and the 3809 regulations require that BLM prevent unnecessary or undue degradation of public lands by operations under the mining laws and that anyone intending to develop mineral resources on public lands must prevent unnecessary or undue degradation and reclaim disturbed areas. "Unnecessary or undue degradation" is defined at 43 C.F.R. § 3809.5. The federal district court decision referenced later, Mineral Policy Center v. Norton, 292 F. Supp. 2d 30 (D.D.C. 2003), affirmed the regulations, including the definition of "unnecessary or undue degradation." To date EPM's operations in the Celatom mining area, in compliance with the 1984 MPO, are in compliance with the regulations and guidance and do not constitute unnecessary or undue degradation.

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	B-3		<p>We also believe that Alternative 3 fails to create an alternative that is for “environmental protection” as it describes (See DEIS at 3-40 and ES-5), and has instead created an alternative that would further increase damage to wildlife and natural resources. While ONDA opposes the proposed action and supports the no action alternative, it provides suggestions for a modified alternative 3 that helps reduce the impacts of the proposed action.</p>	<p>ONDA's modified alternative 3 has 5 points. Roads - the connector road is addressed further in FEIS 3.4.3.3. Roads are part of the Alternatives 2 and 3 depending on whether they were in EPM's 2008 MPO or were proposed by BLM. Roads will be part of the subsequent decision. Mine Pit and Wilderness character - EPM has valid claims for the proposed mine areas and throughout the MPO area. Fences - are analyzed under all the alternatives. Fences will be part of the subsequent decision. Water tanks - and stock ponds are discussed in all the alternatives. Stock water will be part of a subsequent decision. Wilderness character ... - analysis was revised in the FEIS in response to public comments (FEIS Introduction and sec. 4.16). Lands with wilderness characteristics will be part of a subsequent decision. FEIS Alternative 3 is small in scope. EPM, or its predecessors, has been mining in this area since 1985, almost 30 years. Through the years EPM's operations have changed to conform to changes in federal and state laws and regulations. In part the proposed 2008 MPO incorporates these changes, e.g., increased water quality monitoring (FEIS Appen B), the OR dust abatement plan (2008 MPO Appen 32), and management of the mines to accomodate rancher and local access.</p> <p>Many of the practices or design elements described in the 2008 MPO is the documentation of EPM's updated and ongoing compliance with current federal and state laws and regulations.</p>

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	B-4		While we believe the impacts documented under the DEIS are already sufficient to deny such a large-scale impact to public lands natural resources, we believe the DEIS fails to take into consideration the following impacts.	See response to comment B-2.
	B-5		The impacts to sage-grouse habitat are much more extensive than explained in the DEIS. For its analysis, the BLM uses an outdated 2004 data layer depicting "yearlong" and "probable habitat" (see DEIS at 4-72), concluding that a majority of the habitat within the mine project boundary is probable habitat. BLM should instead use the current 2011 data layer created by the Oregon Department of Fish and Wildlife for Oregon's Sage-Grouse Plan, which shows that almost all habitat labeled by BLM as "probable habitat" is now categorized as Core 1 habitat. In the Sage-Grouse Plan, Category 1 habitat is "essential for greater sage-grouse populations and is limited by the inability to mitigate for habitat loss in these areas in reasonable time frame, and is irreplaceable." See Sage-Grouse Plan pg.86. Guidelines are (A) avoidance of impacts through alternatives to the proposed development action; or (B) No authorization of the proposed development action if impacts cannot be avoided." Id. There can be no avoidance of impacts when you create major mine pits in the earth and the other impacts associated with this project; therefore our recommendation is no authorization of this project. Since BLM recognized in this document and others that "BLM's Oregon State Office adopted and agreed to implement wherever possible the Greater Sage-Grouse Conservation Assessment and Strategy for Oregon" (see DEIS at 1-9), we expect that BLM will follow their recommendations in this major proposed action to public lands.	Unfortunately this EIS has taken years to prepare. One result was just as the DEIS was released ODF&W released a significantly updated Oregon sage grouse strategy (Hagen, 2011a). As noted, this made some of the sage grouse analysis in the DEIS outdated. The sage grouse sections of the DEIS were changed significantly in the FEIS (section 4.11, Append C, and others). The changes in the FEIS were made in coordination with ODF&W, including assessment of site specific conditions (FEIS 4.11.3.1) and classification of the mine plan area as Category 2 sage-grouse habitat (FEIS 4.11.3.3.1). In addition ODF&W, EPM, and BLM developed a sage grouse and big game winter range habitat mitigation plan, FEIS appendix C, which is a completely new addition to the FEIS. The mitigation plan followed the direction in Hagen (2011b) for mitigation of sage grouse and big game winter range including the goal of "no net loss with net benefit" for sage grouse habitat.

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	B-6		<p>It should be noted more clearly in the DEIS that Sage-Grouse are warranted to be listed under the Endangered Species Act and any further fragmentation of key habitats will only lead to a future listing. The DEIS should also review significant new information that was compiled by the Fish and Wildlife Service in their determination. Much of this information is the result of new analyses that appeared in the scientific monograph "Ecology and Conservation of Greater Sage-Grouse: A Landscape Species and Its Habitats" (Knick and Connelly 2009). This monograph presented new data demonstrating that sage-grouse respond to and are affected by habitat disturbances at much larger spatial scales that greatly exceed the distances previously thought to affect habitat selection, lek persistence, nest-site selection, nest success, and population viability.</p> <p>All of the studies stress the critical importance for land managers to focus on maintaining large expanses of sagebrush habitat, enhancing quality of existing habitats, and increasing habitat connectivity. The connectivity analyses of Knick and Hanser (2009) found that the most significant spatial scales for environmental predictors of lek persistence or abandonment were proportion of sagebrush cover within 33.5 miles of the lek, proportion of burned area within 33.5 miles of the lek, and level of human footprint within 3.1 miles of the lek. Holloran and Anderson (2005) documented 64% of sage-grouse nests occurred within 3.1 miles of leks, 80% of nests occurred within 5 miles of leks, and 20% of nests occurred at distances greater than 5 miles from leks; nest success also was greater the farther a nest occurred from a lek, indicating a disproportionate potential importance of these more distant nests for population recruitment.</p> <p>Based on their results, Holloran and Anderson (2005) concluded that to protect and maintain sage-grouse populations, land managers should minimize or halt actions that reduce suitability of nesting habitats within 3.1 miles of a lek. With an active sage grouse lek within 1.5 miles of proposed mining activities, and sage-grouse habitat within and surrounding the entire project areas, this DEIS analysis should review how the human footprint of this project will affect sage-grouse populations in the region.</p>	<p>FEIS 4.11.1.5 says sage-grouse are an ESA candidate species. In addition to using local site specific information (FEIS sec. 4.11.3.1 to .4), the Oregon strategy, and mitigation guidance to analyze and mitigate the impacts of the Alternatives on the effected sage-grouse habitat (FEIS sec. 4.11.3.2 to .4), the F&WS 12-month finding and the "monograph" were considered in the FEIS cumulative impacts analysis (FEIS 5.4.6.1).</p>

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	B-7		<p>As described in the DEIS, the proposed action “would diminish or eliminate wilderness characteristics in the Project Area.” See DEIS at ES-15. These wilderness characteristics were first documented by the citizen-proposed Cottonwood Wilderness Study Area and confirmed in this DEIS. We calculate that 2,133 acres of these lands will be directly impacted by the mine proposals, or cut off from the wilderness by new roads developed under this proposal (see attachment A). The 1.4 mile Connector Road alone will cut off 886 acres of potential wilderness, and is unnecessary given the fact that there is an existing alternative route along Mill Gulch Access Road and Beede Access Road.</p> <p>Although the roads will be eventually reclaimed, with a minimum of a 50-year timeline for the mining operations, this decision will, for all practical purposes, remove the mining areas from consideration as wilderness when a future Congress takes up this issue and permanently impair this resource. Furthermore, BLM has failed to adequately analyze the impact on wilderness character that the proposed action will have outside the project area in the remaining Rocky Basin WIM. For example, will the opportunities for solitude continue to be outstanding in the diminished Rocky Basin unit if the project goes forward as proposed? Will the opportunities for primitive and unconfined recreation continue to be outstanding in the smaller area? The answer to both these questions is likely to be “no.”</p> <p>Wilderness is a public lands resource that cannot be permanently impaired or unduly degraded under FLPMA. In <i>Oregon Natural Desert Ass’n v. BLM</i>, 625 F.3d 1092 (9th Cir. 2010), the Ninth Circuit explained that lands with wilderness characteristics “are to be managed as part of the complex task of managing the various resources without permanent impairment of the productivity of the land and the quality of the environment,” that the agency has “ample discretion” under the multiple use mandate to manage lands with wilderness values, and that “wilderness values are among the resources which the BLM can manage under 43 U.S.C. §§ 1712 and 1732. Also, as the court explained, wilderness is a resource BLM must study pursuant to NEPA.</p>	<p>Designated wilderness or WSA is not present within or adjacent to the Project Area. IM-2011-154 requires BLM to “consider identified lands with wilderness characteristics . . . when analyzing projects under NEPA”. This FEIS does that. In addition to consideration of the information provided by ONDA, BLM has completed route analysis, wilderness characteristic inventory and documented its findings in accordance with the IM. Although the IM was issued July 25, 2011, Burns BLM was able to comply with the IM, because the process has been in use in OR for several years. The BLM considered information from public meetings and comments to the DEIS. As a result of these comments one route analysis in the Rocky Basin inventory unit, north of the proposed MPO, was reviewed (FEIS page 4-137). The road’s designation as “not a boundary road” was not changed. BLM, ONDA, and EPM participated in a field visit to the project area. One of the main topics was potential impacts on wilderness characteristics. After the field visit, BLM looked for an alternative route for the Connector road that would avoid more of the Rocky Basin inventory unit (see FEIS 3.4.3.3). A route that created less disturbance was not found. Relative to wilderness characteristics, in this FEIS BLM has thoroughly considered all the available information and complied with the applicable regulations and policies, including open and inclusive public participation as envisioned by NEPA. The FEIS contains additional analysis of wilderness character north of the proposed MPO (FEIS 4.16.3.2).</p>

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	B-8		<p>As noted in the DEIS, this area serves as important habitat for a number of species, including winter range for big game, and habitat for sage-grouse and many species that use sagebrush. However, in conclusion, BLM determined that the project “would not contribute to a loss of viability for wildlife” and “would likely be unmeasurable to the affected populations.” See DEIS at ES-15. BLM explains that this is because wildlife are mobile, that they “would likely shift spatially into adjacent available habitat,” and that eventually the mine will be reclaimed. This conclusion is unacceptable. The BLM was created to help end tragedy of the commons issues associated with livestock grazing and other habitat-degrading uses, so it should not use justifications in this DEIS that leads to the same problems. If every individual project review concluded that wildlife would simply move to other habitat, then incrementally this would eliminate the populations.</p> <p>Furthermore, any wildlife displaced by loss of habitat will compete directly with wildlife that is already using the habitat where they move to. This will result in the absolute demise of wildlife. Many avian species return to an exact location year after year (“site fidelity”) to nest and rear their young. The loss of these sites will cause the permanent loss of future offspring for these birds. Loss of habitat in these locations will contribute directly to a loss of viability to these species.</p> <p>Large mine pits, waste piles, new roads, fences, loud noises, trucks, and other activities associated with major mine projects are not small and cannot be categorized simply as “disturbances” throughout this DEIS. They have serious, long term impacts to wildlife species, some of which do not have a 50-plus year time horizon to wait for habitat to return. On a related note, there is no mention of pygmy rabbits or Golden Eagles and the site should be assessed for potential habitat within the environmental review. We are concerned about potential impacts to these species.</p>	<p>As noted in B-5, sage grouse and big game winter range impacts will be mitigated. As noted in the FEIS (Table 4.11-1), pygmy rabbits are a BLM special status species with a low potential to occur in the project area. The determination of “low potential occurrence” for pygmy rabbits in the area is based on several factors, including few historical records in the vicinity, marginal quality of existing sagebrush habitat (e.g. due to juniper and pine encroachment, fires, and past seedings). Further, survey efforts conducted on the Burns District since 1999 have been identifying and targeting areas with the highest likelihood of supporting pygmy rabbits based on historical observations and the presence of quality habitat. The proposed mine expansion area has not been identified during this time as having a high likelihood of supporting pygmy rabbits. Due to the low potential occurrence in the area and lack of pygmy rabbit sign (e.g. observations, pellets, burrows) during field visits, pygmy rabbits were not considered in detail in the EIS. Golden eagles are not federally listed or a designated BLM special status species; however, they are protected under the Bald and Golden Eagle Act and the Migratory Bird Treaty Act (Sect 4.5.1.1). Golden eagles are also a Bird of Conservation Concern (Sect 4.5.2.2.1) and were considered under the Migratory Bird section, along with several other raptors and migratory bird species. Additional migratory bird information was included in Cumulative Impacts. Golden eagles were not considered individually in more detail, because they are not likely to nest in the area (lack of suitable nesting substrates nearby), there are no historical nesting records in the area (golden eagles have high site fidelity for nests and areas), and the Project Design Elements provide guidance on how to minimize impacts in case they are observed nesting in the future.</p>

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	B-9		<p>The DEIS purportedly considers impacts to air quality in section 4.2, but no specific quantitative analysis is shown. At most, the DEIS predicts that the expanded Project will comply with all federal and state air quality standards (e.g., NAAQS), but no figures are given. The DEIS admits that there are no on-site monitoring data. "At present, the ODEQ does not conduct ambient air quality monitoring in the vicinity of the Project Area. The closest station is located in Buelah, Oregon, approximately three miles northeast of the Project Area." DEIS at 4-8. Such lack of adequate baseline data violates NEPA.</p>	<p>FEIS part 4.2 was updated to address these comments. To summarize air quality monitoring at the mine has not been required, because after 27 years of mining the mine is in an air quality attainment area and there is no evidence of degradation. The State of OR (ODEQ) has required a "Fugitive dust control plan" (MPO App. 32) for the mine since 2007 (FEIS 4.2.3.1). PM 10 and PM 2.5 monitored at Buelah (FEIS table 4.2-2), about 3 miles NE, downwind of the mine, always meet existing Federal and State standards (FEIS 4.2-1). The FEIS contains a quantitative analysis of greenhouse gases from tree removal (FEIS page 4 11) and emissions associated with equipment used in the mining process (FEIS tables 4.2-3 and 4).</p>
	B-10		<p>The Forest Service is required to "describe the environment of the areas to be affected or created by the alternatives under consideration." 40 C.F.R. § 1502.15. The establishment of the baseline conditions of the affected environment is a fundamental requirement of the NEPA process:</p> <p>take place before *a final decision+ is made." LaFlamme v. FERC, 842 F.2d 1063, 1071 (9th Cir.1988) (emphasis in original). Once a project begins, the "pre-project environment" becomes a thing of the past, thereby making evaluation of the project's effect on pre-project resources impossible. Id. Without establishing the baseline conditions which exist in the vicinity Y before *the project] begins, there is simply no way to determine what effect the proposed [project] will have on the environment and, consequently, no way to comply with NEPA.</p> <p>Half Moon Bay Fisherman's Mark't Ass'n v. Carlucci, 857 F.2d 505, 510 (9th Cir. 1988). "In analyzing the affected environment, NEPA requires the agency to set forth the baseline conditions." Western Watersheds Project v. BLM, 552 F.Supp.2d 1113, 1126 (D. Nev. 2008) (emphasis added). "The concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEP process." Council of Environmental Quality, Considering Cumulative Effects under the National Environmental Policy Act (May 11, 1999).</p>	<p>EPM, or its predecessors, has been mining diatomite at this location since 1985. There is little if any monitoring from 1985. Baseline and current conditions data on ground and surface water quality is in SRK (2010a) some of which is in FEIS tables 4.15-1 through 6. Some of this monitoring is upstream or outside existing mine areas. SRK (2010a) water quality data will be the baseline for comparison for water quality monitoring (FEIS Appendix B). Water quality was given much more attention than other resources in the EIS, because it is believed to be the most important potential impact from the Celatom mines. In the FEIS current or baseline data for air quality (PM 10 and 2.5) is in table 4.2-2, material chemistry is in Appendix A, grazing use is in table 4.4-1, noise monitoring is in table 4.6-4, and noxious weeds in figure 4.7.1. The text of the FEIS has been revised to better identify baseline and background data.</p>

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	B-11		<p>Further, the DEIS admits that it has no numerical analysis of the Project's air emissions regarding the NQs, VOCs, and other pollutants (except greenhouse gas emissions). "The PM10 and PM2.5 concentrations are expected to be below the OSAAQS and NAAQS, which are presented in Table 4.2-1 above. The actual quantitative amount is not known." See DEIS at 4-12 (emphasis added). "Despite the lack of tailpipe emissions control technology for combustion sources throughout the Project Area, the PM2.5, CO, NO2, and SO2 concentrations are expected to be well below either the OSAAQS or the NAAQS, which are presented in Table 4.2-1. The actual quantitative amount is not known." <i>Id.</i> (emphasis added)</p> <p>Under NEPA, BLM cannot simply postulate as to the actual extent of a Project's impacts without having the necessary supporting data and analysis</p> <p>Under NEPA, "[a]gencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement." <u>Earth Island Inst. v. U.S. Forest Service</u>, 442 F.3d 1147, 1159-60 (9th Cir. 2006) (quoting 40 CFR §1502.24). NEPA requires an agency to candidly disclose the risks of its proposed action and to respond to adverse opinions held by respected scientists. <u>Seattle Audubon Soc'y v. Mosely</u>, 798 F.Supp. 1473, 1482 (W.D. Wash. 1992) (citing <u>Friends of the Earth v. Hall</u>, 693 F.Supp. 904, 934, 937 (W.D.Wash. 1988)). "The agency may not rely on conclusory statements unsupported by data, authorities, or explanatory information." <i>Id.</i> An agency has acted arbitrarily and capriciously when it fails to make a reasoned decision based on an evaluation of the evidence. <u>Earth Island Inst.</u>, 442 F.3d at 1160.</p> <p><u>Western Watersheds Project v. BLM</u>, 552 F.Supp.2d 1113, 1129 (D. Nev. 2008). The Ninth Circuit has recently rejected a BLM EIS that failed to quantitatively ascertain the extent of air quality emissions, requiring modeling of Project emissions as a prerequisite for NEPA compliance. <u>South Fork Band Council v. Dept. of the Interior</u>, 588 F.3d 718, 727-28 (9th Cir. 2009). This DEIS must do the same.</p>	<p>The South Fork Band Council decision did not hold that air quality modeling was always required for NEPA compliance.</p> <p>As outlined in the response to Comment B-9, the mine is in an air quality attainment area and the existing monitoring, Beulah, indicates continued attainment. FEIS tables 4.2-3 and 2-4 quantitatively estimates CO2 emissions from equipment under 2 scenarios and table 4.2-5 identifies potential pollutants from equipment and dust. The State of Oregon DEQ accepted EPM's Fugitive Dust Control Plan, which has been in place since 2007.</p>

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	B-12		<p>The review of cumulative impacts is deficient. Chapter Five, which briefly mentions some of the cumulative impacts resulting from other past, present and reasonably future actions (RFF's), fails to conduct the proper cumulative impact analysis as required by NEPA. BLM must consider direct, indirect, and cumulative environmental impacts of the proposed action. 40 C.F.R. § 1502.16; 40 C.F.R. § 1508.8; 40 C.F.R. § 1508.25(c). Direct effects are caused by the action and occur at the same time and place as the proposed project. Id. § 1508.8(a). Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Id. § 1508.8(b). Both types of impacts include "effects on natural resources and on the components, structures, and functioning of affected ecosystems," as well as "aesthetic, historic, cultural, economic, social or health [effects]." Id.</p> <p>Cumulative effects are defined as the impacts resulting from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions. 40 C.F.R. § 1508.7. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Id.</p> <p>"The CEQ regulations require agencies to discuss the cumulative impacts of a project as part of the environmental analysis. 40 C.F.R. § 1508.7." Davis v. Mineta, 302 F.3d at 1125 (10th Cir. 2002). "Of course, effects must be considered cumulatively, and impacts that are insignificant standing alone continue to require analysis if they are significant when combined with other impacts. 40 C.F.R. §1508.25(a)(2)." New Mexico ex rel. Richardson, 565 F.3d at 713, n. 36.</p> <p>In a cumulative impact analysis, an agency must take a "hard look" at all actions. An EA's analysis of cumulative impacts must give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment. Y Without such information, neither the courts nor the public ... can be assured that the [agency] provided the hard look that it is required to provide.</p> <p>Te-Moak Tribe of Western Shoshone v. Dept. of the Interior, 608 F.3d 592, 603 (9th Cir. 2010) (rejecting BLM EA for mineral exploration that had failed to include detailed analysis of impacts from nearby proposed mining operations).</p> <p>A cumulative impact analysis must provide a "useful analysis" that includes a detailed and quantified evaluation of cumulative impacts to allow for informed decision-making and public disclosure. Kern v. U.S. Bureau of Land Management, 284 F.3d 1062, 1066 (9th Cir. 2002). The NEPA requirement to analyze cumulative impacts prevents agencies from undertaking a piecemeal review of environmental impacts.</p> <p>Earth Island Institute v. U.S. Forest Service, 351 F.3d 1291, 1306-07 (9th Cir. 2003). NEP's obligation to consider cumulative impacts extends to all "past," "present," and "reasonably foreseeable" future projects. Blue Mountains, 161 F.3d at 1214-15; Kern, 284 F.3d at 1076. The Ninth Circuit decision in Great Basin Mine Watch v. Hankins, 456 F.3d 955, 971-974 (9th Cir. 2006) is particularly on point, as it required BLM to obtain and analyze "mine-specific Y cumulative data," a "quantified assessment of their [other projects] combined environmental impacts," and "objective quantification of the impacts" from other existing and proposed activities in the region.</p>	<p>The FEIS uses Cumulative Effects Study Areas (CESA) an accepted method of cumulative impacts analysis. A CESA was identified for each resource. A review of BLM's LR 2000 database, Burns GIS databases, State of Oregon, local jurisdictions, and private landowners' information was conducted. Table 5.2-1 identifies the various projects or activities that could cumulatively affect resources. Table 5.2-2 provides quantitative data (mostly acres) for past and present activities and reasonably foreseeable future activities (RFFAs).</p> <p>This information is more complete for governmental sources than private land owner information. As noted, some of the numbers in FEIS table 5.2-2 are only governmental data. Two conclusions were made relative to cumulative impacts analysis. First area (acres) was the most informative measurement for analysis, because the resource values are so diverse. Second, the incomplete information would not change the analysis or were not needed for an informed analysis of the proposed MPO. Timeframes are also considered in the cumulative analysis.</p> <p>The text of the FEIS has been revised, when warranted, based on public comments.</p>

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			<p>Here, BLM's analysis of the "cumulative impacts" from other projects within the "Cumulative Effects Study Areas" fails the standards recently confirmed by the Ninth Circuit in Great Basin and Te-Moak Tribe. Those cases directly refuted the BLM's practice of only briefly mentioning the cumulative impacts of other projects in the area, with no quantitative analysis of the impacts from each of these other projects. For example, DEIS Tables 5.2-1 and 5.2-2 admit that there are numerous other "past, present, and RFFs" that will result in cumulative impacts but they merely lists the type of impacts, the acreages of the various projects/impacts, and the accompanying text merely provides a cursory description.</p> <p>That sort of analysis was specifically rejected by the Ninth Circuit in Great Basin. The DEIS contains no "quantified assessment of their *other projects+ combined environmental impacts," and no "objective quantification of the impacts" from these other projects, as required by Great Basin, 456 F.3d at 971-974.</p> <p>Overall, the DEIS fails to "give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment" as required by the court in Te-Moak Tribe, 608 F.3d at 603. The DEIS largely discusses the impacts from the current Project, with no quantified analysis of the impacts from the other projects – the same legal error made by the BLM in Great Basin and Te-Moak Tribe.</p>	

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	B-13		<p>The cumulative effects analysis is also deficient in regards to sage-grouse. Concluding that the sage-grouse will not suffer cumulative impacts from this project "because the vegetation communities within the Project Area are common over the surrounding landscape" is completely inaccurate. The reason why the species is likely to be listed is precisely because of cumulative impacts of incremental habitat fragmentation and loss. Cumulative impacts for this species should be taken into account across their entire range in Oregon and the fact that a 2009 study concluded that Oregon's sage-grouse subpopulations have a 90-100% probability of declining below a sustainable population in 100 years if the carrying capacity continues to decline (Grouse population dynamics and probability of persistence, Studies in Avian Biology, vol.38).</p> <p>Habitat destruction caused by this mine project over a similar timeframe will contribute to this almost certain decline, and the agency should weigh this data into their environmental review. Furthermore, the cumulative impacts section reviews impacts to factors such as sensitive species, vegetation, water quality, air quality, and wildlife in isolation from each other. Since it is a "cumulative" review, there should be a concluding section that reviews the cumulative impacts of all of these impacts together.</p>	<p>The cumulative effects analysis for sage grouse is in FEIS 5.4.6.1. The main positive cumulative impact from the mine would be successful sage-grouse habitat mitigation (FEIS Appendix C). Expected mitigation plan effects are discussed in FEIS 4.11.3.3.1. It is difficult to discuss sage-grouse cumulative impacts when the direct and indirect impacts (FEIS 4.11.3.3) would occur over 50 years. It is difficult to predict RFFAs this far out. In addition many private and public land cumulative impacts, including mining since 1985, were past actions/events (e.g., land use conversion to agriculture, fires, conifer encroachment, mining, and powerlines), the results of which are shown in current vegetation (FEIS 4.13) and sage-grouse habitat (FEIS Figure 4.11.2 and section 4.11.3). As described in Hagen (2011a) Harney Co Oregon has had nearly stable sage-grouse populations over the past 30 years. The two sage-grouse leks closest to existing and proposed mines were discovered after Beede Desert, the closest mine, was fully operational (FEIS 5.4.6.1). Finally, all proposed mines are next to existing mines (FEIS Figure 3.2.1) and the proposed North Kelly Field and Hidden Valley mines are in non or low quality sage-grouse habitat, respectively. In other words, many of the impacts to sage-grouse in the project area and CESAs were past actions. These facts plus the assumed successful implementation of sage-grouse habitat mitigation suggests that in the long term sage-grouse populations in the CESA can be at least stable in the presence of the proposed mine expansion and mitigation.</p>

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	B-14		Taken as a whole, ONDA does not see how this mining proposal could not be concluded to have unnecessary and undue degradation on the resources the agency must protect.	The FLPMA and the 3809 regulations require that BLM prevent unnecessary or undue degradation of public lands by operations under the mining laws and that anyone intending to develop mineral resources on public lands must prevent unnecessary or undue degradation and reclaim disturbed areas. "Unnecessary or undue degradation" is defined at 43 C.F.R. § 3809.5. In assessing compliance with the "unnecessary or undue degradation" standard, BLM looks at the law, the regulations and agency guidance. The federal district court decision referenced in the comment, Mineral Policy Center v. Norton, 292 F. Supp. 2d 30 (D.D.C. 2003), affirmed the regulations, including the definition of "unnecessary or undue degradation." BLM's analysis of the plan of operations for the Celatom Mine Expansion project complies with the statute, the regulations and applicable guidance.
	B-15		<p>As the BLM recognizes in the DEIS, the "BLM is allowed to disapprove or withhold approval of a MPO (if) the MPO proposes operations that would result in unnecessary or undue degradation of public land as defined at 43 CFR 3809.415." FLPM requires that the BLM "shall Y take any action necessary to prevent unnecessary or undue degradation of the lands." 43 U.S.C. § 1732(b). This is known as the "UUD" standard. s the leading FLPM and mining federal court decision states, this duty to "prevent undue degradation" is "the heart of FLPM "that+ amends and supersedes the Mining Law." Mineral Policy Center v. Norton, 292 F.Supp.2d 30, 42 (D.D.C. 2003).</p> <p>FLPMA, by its plain terms, vests the Secretary of the Interior [and BLM] with the authority – and indeed the obligation – to disapprove of an otherwise permissible mining operation because the operation, though necessary for mining, would unduly harm or degrade the public land.</p> <p>Id. "FLPMA's requirement that the Secretary prevent UUD supplements requirements imposed by other federal laws and by state law." Center for Biological Diversity v. Dept. of Interior, 623 F.3d 633, 644 (9th Cir. 2010).</p> <p>BLM complies with this mandate "by exercising case-by-case discretion to protect the environment through the process of: (1) approving or rejecting individual mining plans of operation." Id. at 645, quoting Mineral Policy Center, 292 F.Supp.2d at 44. The Ninth Circuit has stressed the "environmental protection provided by the MPO [mining plan of operation] process." Center for Biological Diversity, 623 F.3d at 645 (emphasis in original)</p> <p>BLM cannot approve a mining plan of operations that would cause "unnecessary or undue degradation." 43 C.F.R. § 3809.411(d)(3)(iii). BLM's mining regulations further require that all operations "must take mitigation measures specified by BLM to protect public lands." 43 CFR § 3809.420(a)(4). In addition, BLM must ensure that all operations comply with the Performance Standards found at §3809.420. See 43 CFR §3809.5 (definition of UUD, specifying that failing to comply with the Performance Standards set forth at §3809.420 constitutes UUD). See also Center for Biological Diversity, 623 F.3d at 644-45 (illustrating some of the §3809.420 Performance Standards that must be met to comply with the duty to prevent UUD).</p>	See B-14.

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	B-16		<p>Further, the Interior Department has also repeatedly held that compliance with FLPMA cannot be waived by BLM due to the fact that the costs of compliance would render the mining operation uneconomic and the mining claims invalid.</p> <p>[I]n determining whether a discovery exists, the costs of compliance with all applicable Federal and State laws (including environmental laws) are properly considered in determining whether or not the mineral deposit is presently marketable at a profit, i.e. whether the mineral deposit can be deemed to be a valuable mineral deposit within the meaning of the mining laws. If the costs of compliance render the mineral development of a claim uneconomic, the claim, itself, is invalid and any plan of operations therefor is properly rejected. Under no circumstances can compliance be waived merely because failing to do so would make mining of the claim unprofitable.</p>	<p>If the comment is suggesting that BLM should have conducted a validity examination of the mining claims before approving a plan of operations, that is not required. BLM regulations require that a validity examination be conducted when lands are segregated or withdrawn. 43 CFR §3809.100(a). The 3-Rivers RMP designated the lands in the project area as open to mining. That EPM has been mining diatomite at the Celatom mine for about 25 years and is applying to expand their operations indicates financial viability of the entire enterprise in the existing setting.</p>
	B-17		<p>Great Basin Mine Watch, 146 IBLA 248, 256 (1998)(emphasis added)(decision of the Interior Board of Land Appeals). Regarding the requirement for the operator to provide sufficient information to demonstrate that the proposed mining operation will not cause undue degradation, the Ninth Circuit has stated that “BLM not only has the authority to require the filing of supplemental information, it has the obligation to do so.” Center for Biological Diversity, 623 F.3d at 644, quoting Great Basin Mine Watch at 256.</p>	<p>The BLM has determined that it has sufficient information to review the proposed plan of operations and determine whether it will cause unnecessary or undue degradation. When requested, supplemental information has been provided.</p>
	B-18		<p>Overall, these mandates represent a nondiscretionary duty on BLM to protect public lands, including as acknowledged by BLM the duty to “protect non-mineral resources of federal lands, including groundwater and surface water” from the types of environmental harms caused by the Project. BLM has failed to do so in this case.</p>	<p>See response to comment B-15. BLM will not approve the proposed plan of operations until it has confirmed that it will not result in unnecessary or undue degradation and comply with other applicable legal requirements. Specific to ground and surface water quality, SRK (2010a) found that surface acidic water was being appropriately managed and neither surface nor ground water acid drainage was occurring (FEIS 4.15.2.3.1 & 4.15.2.3.2). Ground water OR MCL exceedances were characteristics of the area's geology, not existing mining (FEIS 4.15.2.3.2). The monitoring plan (Appen B) will track ground and surface water parameters to ensure that mining does not change these values.</p>

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	B-19		<p>In order to meet these duties in this case, BLM must, at a minimum, require the operator to prevent undue degradation to the Wilderness Characteristics. Currently, the DEIS predicts that roughly 4,338 acres of lands with Wilderness values will be "diminished or eliminated." See DEIS at ES-15, 4-118. Under FLPMA, the agency must prevent such undue degradation and must impose "mitigation measures to protect public land" that will preclude these significant impacts to this extremely valuable resource.</p>	<p>The DEIS and FEIS complied with FLPMA, NEPA, the 3809 regulations, and IM 2011-154 by analyzing potential impacts of the alternatives to lands with wilderness characteristics as one of the multiple uses and values. The DEIS analysis found that wilderness character in the proposed MPO area would be impacted by the proposed action and other alternatives. Based on comments to the DEIS (Appen D) from ONDA and other members of the public additional analysis was done for the FEIS (route inventory and connector road alternatives). As stated under B-2 UUD has specific regulatory requirements which EPM is meeting relative to the proposed MPO and their mining in the Celatom area. The federal district court decision referenced in the comment, Mineral Policy Center v. Norton, 292 F. Supp. 2d 30 (D.D.C. 2003), affirmed the regulations, including the definition of "unnecessary or undue degradation." Contrary to the assertion in the comment existing laws and regulations do not require prevention of degradation of wilderness characteristics on lands that do not have special designation (WSAs or wilderness). No such designations exist within the project area.</p>
	B-20		<p>Further, BLM must prevent undue degradation to Greater Sage-Grouse and other sensitive or candidate species. BLM admits that the Project (alternatives 2 or 3) will have significant adverse impacts to these species. See DEIS at 4-72 to 4-75. The DEIS does not contain sufficient "mitigation measures to protect" these species, as required by the Part 3809 Performance Standards. At a minimum, this means that the Project should be revised to implement the Oregon Sage-Grouse Plan discussed herein. This rule supercedes any requirement to provide mining companies unlimited access to public lands under the 1872 Mining Law.</p>	<p>As discussed in B-6 and B-13 the sage-grouse sections were extensively revised in the FEIS, including development of habitat mitigation with ODF&W and EPM that complies with ODF&W mitigation recommendation of "no net loss" with "net benefit" to sage grouse habitat. Project Design Elements (PDEs) in the DEIS and FEIS (Section 3.2.11) protect sage grouse breeding and nesting with seasonal work restrictions and required concurrent reclamation to control noxious weed establishment and spread. These measures in combination with the limited mining operations expected in the winter provide protection from mining activities from late fall through spring.</p>

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	B-21		<p>It is BLM's duty to provide for reasonable alternatives that decrease the impacts of a proposal to public land values and natural resources. While BLM states that it has "identified resource-specific measures as additional environmental protection measures" to be included in Alternative 3 "for environmental protection," it fails to do so.</p> <p>NEPA requires the agency to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. § 4332(E); 40 C.F.R. § 1508.9(b). It must "rigorously explore and objectively evaluate all reasonable alternatives" to the proposed action. City of Tenakee Springs v. Clough, 915 F.2d 1308, 1310 (9th Cir. 1990).</p> <p>The "alternatives" section is "the heart of the environmental impact statement." 40 C.F.R. § 1502.14. "The consideration of alternatives requirement ... guarantee*s+ that agency decisionmakers have before them and take into proper account all possible approaches to a particular project (including total abandonment of the project) which would alter the environmental impact and the cost-benefit balance."</p>	<p>The BLM has to look at reasonable alternatives. As defined in 40 CFR 1502.14, the EIS must consider a range or reasonable alternatives, including the Proposed Action and the No Action Alternative and provide a description of alternatives eliminated from further analysis with the rationale for elimination (40 CFR 1502.14(a)). The CEQ regulations direct that an EIS include a description of the No Action Alternative (40 CFR 1502(d)). The No Action Alternative is the only alternative that must be analyzed in an EIS that does not respond to the purpose and need for the action. As described in B-3 EPM has modified their mining operations to comply with changes in Federal and Oregon law. Many of these actions are part of the 2008 mine plan, which is thorough. The result was few beneficial additions or changes were needed.</p>
	B-22		<p>Pit River Tribe v. U.S. Forest Service, 469 F.3d 768, 785 (9th Cir. 2006). BLM says that Alternative 3 is the same as the proposed action, except for these additional elements, which include "fenced mine areas, one additional access road, a locked gate, removal of a sediment basin, maintenance of an existing stock water pond, and installation of new stock watering ponds." Above and beyond the impacts associated with the proposed action, this list alone will create the following new impacts:</p>	<p>The BLM Authorized Officer will make the determination of what will be approved for the Project and what will be included in the Record of Decision. The BLM Authorized Officer has the discretion, based on the analysis in the FEIS, to select from elements associated with any of the alternatives in order to make an informed decision that prevents unnecessary and undue degradation of the public lands.</p>
	B-23		<p>The construction of Eagle Cutoff Road will remove an additional 142 acres from consideration as wilderness. To say the road "would have essentially the same impacts" as the proposed action because it will be reclaimed is not accurate. See DEIS at 4-77. As depicted in Attachment B, this action is 1.5 miles from a Sage-Grouse lek and will further fragment Core 1 Sage-Grouse Habitat at a time when we cannot afford fragmentation. It is also on the edge of elk winter range and will directly impact native plants and habitats along the half mile of road construction. How BLM can state that "Alternative 3 would not otherwise result in additional impacts from noxious weeds" does not make sense because roads and soil disturbance are primary factors in the spread of noxious weeds. See DEIS at 4-49</p>	<p>In compliance with NEPA the potential impacts of the Eagle Cutoff Road on wilderness characteristics were analyzed in FEIS 4.16.3.3 and Figure 3.3.1. The analysis in the FEIS did focus on the impacts of the existing and proposed mines more than on a road next to a mine. The impacts of this road on sage-grouse were analyzed in FEIS 4.11.3.4. The addition of newer sage-grouse information from ODF&W was described previously. The impacts to vegetation were analyzed in FEIS 4.13.3.4. The noxious weed analysis was based on the assumption of EPM's continued compliance with the "invasive, non-native species" "Project Design Element" (FEIS 3-38) and a component of the 2008 MPO. As describe previously new roads will be a component of the subsequent design.</p>

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	B-24		<p>The development of 10.5 miles of new fence in designated Core 1 and low density habitat will negatively impact sage-grouse populations that move through this area, and create barriers for big game within and on the edge of their winter range. As you can see in Attachment B, Core 1 Habitat covers most of the Celatom Project Boundary, as well as almost all of the proposed fencing in Alternative 3. A recent study by Wyoming Fish and Game found 146 sage-grouse collisions or deaths over a 20-month period along a 4.7 mile fence (study by Tom Christiansen, Sage-Grouse Program Coordinator, October 26, 2009). Alternative 3's fence proposal is more than twice this length. Furthermore, to claim that removing two miles of fence is somehow mitigating the impacts of the 10.5 miles of new fence is completely untruthful. Both fences removed will have equal distances of fence installed parallel to them within a couple hundred feet</p>	<p>In compliance with NEPA the FEIS analyzed the potential impacts of the additional fences in Alternative 3 on sage-grouse (p 4-94) and big game (Section 4.17.3.4). Hopefully statements that removing 2 miles of fence would mitigate 10.5 miles of new fence have been removed. The study referenced in this comment took place less than two miles from two large (100 plus males) sage grouse leks, and was in important late brood rearing and wintering habitat. The study stated that "Not every fence is a problem", and suggests fences preferably be constructed at least 0.6 miles from a lek. The Greater Sage-grouse Conservation Assessment and Strategy for Oregon (Hagen 2011a) also recommends new fences not be constructed within 0.6 miles of sage-grouse leks. The nearest proposed fence in the Mine Expansion area would be approximately 1.6 miles from a lek (average of 12 males since 2004), with 9.5 miles of the fences farther than two miles from the lek.</p>
	B-25		<p>New water tanks for livestock will be installed and maintained in the Puma Claims Operation Area, which will create more intensive livestock grazing and impacts in the vicinity, impacting sage-grouse in Core 1 habitat through the direct loss of habitat as well as new threats from West Nile Virus. There is only one sentence about new water tanks at the Puma Claims Operation Area, without an explanation of need or a description of the impacts from the increased grazing and West Nile Virus threats that will result. It is explained that there will be an overall loss of 250 AUMs under Alternative 3 over the four grazing allotments, but it does not explain the need for these particular water developments on the edge of one grazing allotment in Core 1 sage-grouse habitat.</p>	<p>The Puma Claims Operation Area is not in Core sage grouse habitat (see response to comment B-20). Puma claims is an existing mine service area with a well and storage tank used for dust abatement (FEIS 2.2.4). There are no additional impacts from EPM installing livestock watering troughs at this site. Documented West Nile virus (WNV) outbreaks have been localized (Hagen 2011a), and relatively rare in Oregon (DeBess 2010). ODFW and ODHS are actively monitoring for WNV, including testing sage-grouse, and only one bird out of 1,097 (0.09%) tested positive between 2006 and 2009. Mosquitos (esp. Culex tarsalis) are the primary vector for WNV, and installing water tanks that have steep sides and are regularly maintained prevents vegetation buildup, which minimizes suitable habitat for mosquito egg-laying and larval development (Doherty 2007). The installation of water troughs at Puma Claims would not increase the risk of WNV over the risk from flood irrigated agriculture fields 1 to 2 miles to the west.</p>

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	B-26		<p>The BLM should pursue an Alternative 3 that actually does what it sets out to do in the DEIS, and create an alternative for "environmental protection." It would only make sense that a public agency would create an alternative that creates the least impact and fulfills its legal obligation to maintain the true definition of "multiple use" as defined by FLPMA: "a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and non-renewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output."</p>	See response to comment B-3.
	B-27		<p>Roads – Alternative 3 should eliminate three sections of proposed roadways and instead direct traffic onto existing roads on public and private lands (see recommendations on Attachment A).</p> <p>The Connector Road is unnecessary, as there is an existing alternative route that only adds 1.4 miles of driving between Section 36 and Hidden Valley along Mill Gulch Access Road and Beede Access Road. Eliminating this road will maintain wilderness character on more than 886 acres of land within the Rocky Mountain WIM. The northern end of the Hidden Valley & Eagle Road, above the mine pit, unnecessarily extends into wilderness character lands, cutting off at least 63 acres. The road disturbs Core 1 Sage-Grouse habitat and is proposed down a steep gradient that will create unnecessary environmental degradation. Traffic should instead be re-routed back to the Beede Access Road to connect with the Beede Desert Road along flatter terrain, adding very minimal driving distance between Hidden Valley and Eagle proposed sites. Eagle Cutoff Road, which cuts off at least 142 acres of wilderness character lands, and disturbs Core 1 Sage-Grouse habitat, is unnecessary and traffic can instead be routed on the existing road to its south, which connects with the intended Cottonwood Reservoir Road. BLM is not required to destroy natural resources to create the most convenient route for mining operations, when there are reasonable alternatives already existing on the ground.</p>	As described under previous comments, the potential impacts of the Eagle Cutoff Road on wilderness characteristics and other resources is analyzed in the FEIS. The impacts of the connector road and ONDA's suggestions are discussed in FEIS 3.4.3.3. The Hidden Valley Eagle Road (FEIS 3.2.2.3.3) is hardly discussed in the FEIS. A review of FEIS Figure 3.2.4 and 5 shows this road would follow the west edge of the Hidden Valley pit until it crossed the ridge at an accessible point and drop down to the Eagle pit. Because the two pits are so close together and the road lies between them, the analysis of the potential impacts of the two proposed mines included the road. Finally, roads will be part of the subsequent decision, and ONDA's and other public comments about roads will be taken into account.

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Commentor	Comment #	Name	Comment	Response to Comment
	B-28		Mine Pit – Figure 3.2.3 of the DEIS depicts two proposed massive open pits and waste stockpiles next to each other in the North Kelly Field Mine Operations Area. These pits are separated by a road which defines the eastern edge of the Rocky Basin WIM. Alternative 3 should exclude the proposed West Open Pit, allowing 256 acres of public lands to maintain in wilderness character. The DEIS does not explain why it is necessary to have two adjacent mine pits at this location, and because one of them destroys the wilderness character that BLM must protect, it should be eliminated from a alternative aimed at environmental protection.	One reason for the size and shape of the proposed North Kelly Field Mine Operation Area is EPM holds valid mining claims to this area (2008 MPO Appendix 5). The reason that 2 pits are proposed is the 1984 MPO included a 100 foot setback from Mill Gulch. That setback is continued in the 2008 MPO. Mill Gulch bisects North Kelly Field operation area (FEIS Figure 3.2.3).
	B-29		Fences – No new fencing should be installed in Alternative 3, for the reasons described above. However, if any fences are authorized in the project area, which all contain agency-recognized sage-grouse habitat, they must be flagged conspicuously to protect sage-grouse. The Wyoming Fish and Game study referenced above, which showed high fence mortality to sage-grouse due to collision, also concluded that flagged fences can reduce sage-grouse mortality by 61 percent.	See B-24. As required by NEPA the potential impacts of the fences proposed in Alternative 3 were analyzed in the FEIS (4.11.4.4). ONDA and other public comments about fences will be considered. Fences will be part of the subsequent decision.
	B-30		Water tanks – There should be no new water development proposed in Alternative 3. As described above, they only lead to increased impacts and do not belong in an alternative aimed at environmental protection.	See B-25.
	B-31		Wilderness Character Lands and Areas South of Puma Claims – Alternative 3 should include a provision that was considered in this DEIS that “would have eliminated the portion of the Project Area that was within the BLM’s Rocky Basin Wilderness Inventory Maintenance (WIM) unit.” See DEIS at 3-47. At a minimum, Alternative 3 should eliminate all of the Rocky Basin WIM that remains after the proposed project is developed from exploration drilling and any future mining development. At a minimum, protecting the wilderness character and sage-grouse Core 1 habitat on the roughly equal amount of remaining wilderness character lands in the project area following completion of this proposed mining operation should be required. Likewise, the BLM should reconsider their alternative that “would have eliminated the portion of the Project Area that is south of the Puma Claims Area and thus eliminated exploration activities in the Sagebrush Flat area.” Id. This area contains Core 1 sage-grouse and big game habitat and Alternative 3 should preclude future mining activities in this area, including any exploration drilling proposed in this action, as well. BLM does not describe why this beneficial alternative was not considered.	Closing the portion of the Rocky Basin LWC north of the proposed MPO to mineral development would require a land use plan amendment. The 3-Rivers RMP identified the project area and the Rocky Basin LWC as open to exploration and mining (FEIS 1.4.1). That is also why the Sagebrush Flat area is open to exploration. FEIS Figure 4.11.2 shows that Sagebrush Flat is “low density” and non-core habitat for sage-grouse.
	B-32		As described in the DEIS and in this letter, the proposed action would create unnecessary and undue degradation to public lands that serve as key habitat for sage-grouse and other species and contain lands with wilderness character that must be managed to maintain that character. Therefore, ONDA recommends that BLM choose the “no action” alternative. Furthermore, ONDA requests that BLM improve their EIS to further detail the real impacts of this proposal and at the very minimum, create an Alternative 3 that decreases impacts from the proposed action, not increases them. Ultimately, a project of this size and magnitude has impacts that will significantly impair natural resources and should not be allowed. Alternative 1 is the preferred alternative.	Parts of the FEIS were significantly changed from the DEIS (Introduction) in response to the updated ODF&W sage grouse strategy (Hagen 2011a) and comments about the DEIS from the public and other reviewers. Public comments will also be considered in reaching the subsequent decision.

Letter A



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION 10

1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OFFICE OF
ECOSYSTEMS, TRIBAL
AND PUBLIC AFFAIRS

May 23, 2011

Kenny McDaniel, Burns District Manager
BLM, Burns District Office
28910 Highway 20 West
Hines, Oregon 97738

Re: U.S. Environmental Protection Agency (EPA) comments for the Celatom Mine
Expansion Draft Environmental Impact Statement (DEIS). EPA Project
Number: 08-056-BLM

Dear Mr. McDaniel:

The Environmental Protection Agency (EPA) has reviewed the draft EIS for the proposed Celatom diatomaceous earth mine expansion located in Henry and Malheur Counties; Oregon. Our review was conducted in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. Under our policies and procedures, we evaluate the environmental impact of the proposed action and the adequacy of the impact statement,

The current mine involves three open pits and the proposed expanded mine life is 50 years. The total acreage of existing and expanded disturbance encompasses 8,115 acres of BLM land, 1,280 acres of state land, 1,640 acres of private land, and 1,600 of private surface estate. The proposed mine areas are referred to as the North Kelly Field, Hidden Valley, and Eagle Mine. The DEIS analyzes the no action alternative and two action alternatives: Proposed Alternative 2 and Proposed Alternative 3 with additional design elements. The additional design elements include restricting mine access, maintaining and developing stock water ponds, and removing a sediment basin.

The DEIS clearly describes the regulatory framework of each resource area; however, there is a lack of information on key components such as monitoring, basis for environmental predictions, mine reclamation, financial assurance and groundwater and surface water, impacts. Due to this lack of information and concerns associated with impacts to water resources we have assigned a rating of EC-2 (Environmental Concerns - Insufficient Information) to the Draft EIS. Our discussion of these issues is below. Please see Attachment 1, EPA's specific comments, for additional questions and recommendations.

MONITORING

The EIS briefly states that monitoring will be required and refers to Appendix 62 of the Mine Plan Operations (MPO). This section of the MPO is not included in the EIS and is only available in person. Therefore, it is not readily accessible for review. Because of this we are unclear about the specifics of a monitoring plan.

-1

-2

The NEPA analysis should describe project monitoring in some detail. We recommend as a general rule that the level of effort afforded monitoring be commensurate with the complexity of the project and the risk to and sensitivity of the affected environment if a project is permitted and/or approved. As a first step, we recommend that the NEPA analysis clearly define the goals and objectives of monitoring, and present an overall monitoring strategy for the project. Second, the NEPA analysis should provide enough detail on the monitoring program for reviewers to evaluate whether the goals and objectives of monitoring will be achieved. This can generally be satisfied by providing summary information on monitoring (including a list of measurement parameters, methods, locations, frequency, data analysis, and reporting). In addition, we recommend that alternatives include clear requirements for regular analysis and reporting of data to oversight agencies, and include a requirement that the operator submit a full sampling and quality assurance plan for agency approval. The NEPA analysis should discuss who will conduct monitoring, the frequency and how monitoring will direct management decisions. Please provide this information in the final EIS.

A-2
Cont.

We also recommend that the final EIS include past monitoring data from current operations and discuss the sources of elevated levels of water quality parameters or impacts to other resources, using data collected by the company and agency inspections during operation of the existing mine. The final EIS should also disclose any issues encountered front implementing the plan and how they were addressed, which will inform future monitoring.

ENVIRONMENTAL PREDICTIONS

Throughout the EIS there are conclusive statements about water quality impacts; however, the source or basis of these predictions is unclear. The following are examples where we have concerns with the clarity of information in the EIS related to surface water and groundwater.

A-3

Surface Water- Section 4.15.1 notes that the primary cause of water quality degradation on public land is from non-paint sources causing sediment and temperature increases. Section 4.15.3.3.2 includes three sentences about impacts on surface water and one briefly states that there would not be any impacts. It is not clear what the basis of this statement is. The EIS does not include any numerical data or information on modeling. Furthermore, the list of parameters in Table 4.15-3 for surface water quality does not include temperature or total suspended solids as measured criteria. These are standard criteria and should be included in the analysis of water quality impacts. The EIS should include predicted values and reference to specific scientific research and/or explanation with modeled predictions.

We understand from the EIS that this region is semi-arid and that many streams may be either intermittent or ephemeral. However, the EIS does not clearly describe the setting and presence of surface water in the project area. We believe that the contribution of small, intermittent, and ephemeral streams to the overall watershed should be considered in the analysis. The section on surface water features only includes a short description of Altnow Reservoir; however the section on hydrology includes a list of tributaries draining to larger order streams in the project area, which are not discussed under surface water features. There is also

no discussion of water quality impaired streams in the project area. The EIS should more fully discuss the presence, sizes and quality of the water in the project area.

Cont.

Groundwater- One of the major issues associated with this mine is the presence of acid generating material (unoxidized diatomite), Throughout the document there are multiple instances stating that there would not be a pit lake at the end of mining due to mining above the water table and there are statements that mining could occur below the water table at the Kelly Field pit, There are also instances where the document states that if there is mining below the water table that a mine pit lake would not occur due to evaporation (82 gpm) exceeding inflow (50 gpm). The document discusses the location of shallow groundwater and process for backfilling pit to reduce migration of contaminants and increase evaporation of a pit lake. The document is very confusing to follow regarding mine operations, groundwater characterization and impacts. There is no disclosure of the probability of the various scenarios and therefore, it is not clear how likely it is that migration could occur. Additionally the EIS states that the current conceptual model shows that migration would only be possible in the proposed pits east of the Upper Mill Gulch Fault; however, the EIS does not discuss which mine areas would exist in this vicinity. The DEIS lacks justification for this statement and it seems to conflict with the prediction of no impacts to groundwater. We recommend that the final EIS clearly and concisely characterize all of the open pits in one section, disclose the probability of various scenarios, and provide reference to predictions of potential groundwater impacts.

A-5

RECLAMATION

The EIS describes the reclamation plan and states that backfilling of open pits would occur and that disturbed areas would be re-contoured or re-graded and planted to reestablish native vegetation communities. The EIS should also discuss how waste material would be handled prior to revegetation and if there is preferential handling of unoxidized material and plant processing waste. The EIS should disclose whether or, not there is a risk of leaching from vegetated dumps during high run off or precipitation events.

This mine is known to contain acid generating material. This can be a major environmental risk if conditions create an acid rock drainage scenario (e.g., groundwater inflow or high precipitation event). The EIS discusses the pit walls of the Kelly Field and existence of ° acid generating material but there is not the same discussion for the other mine areas. Also, the EIS does not clearly explain what the reclamation of the current pit lakes is, which have measured low pH. The previous Environmental Analysis was completed in 1985. We strongly recommend that the final EIS evaluate mine closure as a whole and consider more current information and operating procedures when finalizing the detailed reclamation plan.

A-7

FINANCIAL ASSURANCE

The EIS does not include any details regarding financial assurance, which we recommended in our scoping comment letter dated October 9, 2008. NEPA provides for the disclosure to the public and decision-makers all information concerning environmental consequences of a proposed action before the decisions are made and before actions are taken. NEPA does not directly refer to disclosure of financial assurances. However, a key component to determining the environmental impacts of a mine is the effectiveness of closure and reclamation activities, including long-term water management. The amount and viability of

4

financial assurance are critical factors in determining the effectiveness of reclamation and closure activities and, therefore, the significance of the environmental impacts. The final EIS should include details about the bond mechanism and a range of costs so that there is a context for understanding the cost of ensuring that the mine is appropriately reclaimed and closed. We are available and willing to explore this issue with you more and we welcome any information you have related to the existing bond and proposed estimate.

A-8
Cont.

Thank you for the opportunity to review this EIS. Please feel free to contact me at (206) 553-1601 or by electronic mail at reichgott.christine@epa.gov, or you may contact Lynne McWhorter of my staff as the NEPA Review Lead for this project at (206) 553-0205 or by electronic mail atmcwhorter.lynne@epa.gov, with any questions you may have.

Sincerely,

**ORIGINAL FAXED DOCUMENT WITH SIGNATURE
ON FILE WITH THE BURNS BLM**

Christine B. Reichgott, Manager
Environmental Review and Sediment Management Unit

cc: Oregon Operations Office

**EPA Specific Comments on Proposed
Celatom Mine Expansion**

- Section ES-6. The brief summary of geochemical characteristics only discusses the Kelly Field. This occurs throughout the document while other pits contain unoxidized material as well yet their impacts are not disclosed. We assume that this is because Kelly Field may be the only pit that could be mined below the water table; however, it is not clear what the fate and transport of contaminants from the other proposed and current pits that contain acid generating material (e.g., low pH data in Table 4.15-4). Please discuss the geochemistry of the other pits including pit walls in detail and their potential environmental impacts. } A-9
- Section 3.2.11.3. The EIS discusses mine reclamation and pit backfilling and states that Kelly Field could have "an engineered partial backfill as described in Section 3.2.4." However, Section 3.2.4 was not included in the document nor was available on the online version. Please include this information in the EIS. } -10
- Section 3.2.11.8.2. The first paragraph states that Kelly Field would not be mined below the water table. The second paragraph states that the Kelly Field could be mined below the water table. Please clarify whether or not it is reasonably foreseeable that the Kelly Field would be mined below the water table. Furthermore, the analysis should include a reasonably foreseeable, worst case scenario regarding the potential impacts from mining any pit below the water table and what reclamation or post closure activities would be required to protect the environment. } A-11
- Section 4.3. This section describes the geology and minerals of the project site. it would be helpful if there were figures illustrating the geologic strata with depths. Please include this in the final EIS. } A-12
- Section 4.15 Water Quality. The EIS included Figure 4.15.1, which illustrates water resources in the project area. It would be helpful if this figure also included a layer illustrating current and proposed mine operations so that the reviewer can understand proximity of the mine operations to water resources. Please include a figure with both of these layers in the final EIS. } -13
- Section 4.15.2.1. Throughout the document there are instances where the information presented is vague and connections to previous sections are not made. One example is the following sentence on Pg 90, "The basic issue is that one of the proposed pits may be excavated below the water table..." We assume this is referring to the Kelly Pit although this is not clear and we strongly recommend practicing redundancy particularly when discussion significant issues such as acid rock drainage. } A-14
- Section 4.15.3.4. The EIS discusses groundwater interaction with the Eagle Mine and Hidden Valley and states that low K values for, diatomite pit walls and floors would minimize seepage. The EIS should include what the K values for hydraulic conductivity are and provide the basis for the conclusion that seepage would be minimized and by how much. } -15

**U.S. Environmental Protection Agency Rating System for
Draft Environmental Impact Statements
Definitions and Follow-Up Action***

Environmental Impact of the Action

LO - Lack of Objections

The U.S. Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC - Environmental Concerns

EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO - Environmental Objections

EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative), EPA intends to work with the lead agency to reduce these impacts.

EU - Environmentally Unsatisfactory

EPA review has identified adverse environmental impacts that are of sufficient, magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 - Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 - Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action, The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 - Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for, referral to the CEQ,

* From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment, February, 1987.



May 20, 2011

BLM Burn District Office
28910 Hwy 20 West
Hines, Oregon 97738

Comments re: the Draft Environmental Impact Statement for the Celatom Mine Expansion Project

Dear BLM:

Please accept this letter as public comments on the Draft Environmental Impact Statement (DEIS) for the Celatom Mine Expansion Project, a project proposed on sensitive desert lands in Eastern Oregon. The Oregon Natural Desert Association (ONDA) is a non-profit public interest organization of approximately 1,500 members. Its mission is to protect, defend and restore the health of Oregon's native deserts. OND has a long history of interest and involvement in public lands management with respect to wilderness, grazing, riparian areas, water quality, and protection of imperiled fish and wildlife species and their habitat.

B-1

The proposed action will create unnecessary and undue degradation, and permanent impairment, to public land resources that have not been fully documented in the DEIS. We also believe that Alternative 3 fails to create an alternative that is for "environmental protection" as it describes (See DEIS at 3-40 and ES-5), and has instead created an alternative that would further increase damage to wildlife and natural resources. While ONDA opposes the proposed action and supports the no action alternative, it provides suggestions for a modified alternative 3 that helps reduce the impacts of the proposed action.

B-2

B-3

The DEIS Fails to Fully Account for Impacts

While we believe the impacts documented under the DEIS are already sufficient to deny such a large-scale impact to public lands natural resources, we believe the DEIS fails to take into consideration the following impacts.

B-4

Sage-Grouse

The impacts to sage-grouse habitat are much more extensive than explained in the DEIS. For its analysis, the BLM uses an outdated 2004 data layer depicting “yearlong” and “probable habitat” (see DEIS at 4-72), concluding that a majority of the habitat within the mine project boundary is probable habitat. BLM should instead use the current 2011 data layer created by the Oregon Department of Fish and Wildlife for Oregon’s Sage-Grouse Plan, which shows that almost all habitat labeled by BLM as “probable habitat” is now categorized as Core 1 habitat. In the Sage-Grouse Plan, Category 1 habitat is “essential for greater sage-grouse populations and is limited by the inability to mitigate for habitat loss in these areas in reasonable time frame, and is irreplaceable.” See Sage-Grouse Plan pg.86. Guidelines are “(I) avoidance of impacts through alternatives to the proposed development action; or (B) No authorization of the proposed development action if impacts cannot be avoided.” Id. There can be no avoidance of impacts when you create major mine pits in the earth and the other impacts associated with this project; therefore our recommendation is no authorization of this project. Since BLM recognized in this document and others that “BLM’s Oregon State Office adopted and agreed to implement wherever possible the Greater Sage-Grouse Conservation Assessment and Strategy for Oregon” (see DEIS at 1-9), we expect that BLM will follow their recommendations in this major proposed action to public lands.

B-5

It should be noted more clearly in the DEIS that Sage-Grouse are warranted to be listed under the Endangered Species Act and any further fragmentation of key habitats will only lead to a future listing. The DEIS should also review significant new information that was compiled by the Fish and Wildlife Service in their determination. Much of this information is the result of new analyses that appeared in the scientific monograph “Ecology and Conservation of Greater Sage-Grouse: A Landscape Species and Its Habitats” (Knick and Connelly 2009). This monograph presented new data demonstrating that sage-grouse respond to and are affected by habitat disturbances at much larger spatial scales that greatly exceed the distances previously thought to affect habitat selection, lek persistence, nest-site selection, nest success, and population viability. All of the studies stress the critical importance for land managers to focus on maintaining large expanses of sagebrush habitat, enhancing quality of existing habitats, and increasing habitat connectivity. The connectivity analyses of Knick and Hanser (2009) found that the most significant spatial scales for environmental predictors of lek persistence or abandonment were proportion of sagebrush cover within 33.5 miles of the lek, proportion of burned area within 33.5 miles of the lek, and level of human footprint within 3.1 miles of the lek. Holloran and Anderson (2005) documented 64% of sage-grouse nests occurred within 3.1 miles of leks, 80% of nests occurred within 5 miles of leks, and 20% of nests occurred at distances greater than 5 miles from leks; nest success also was greater the farther a nest occurred from a lek, indicating a disproportionate potential importance of these more distant

B-6

nests for population recruitment. Based on their results, Holloran and Anderson (2005) concluded that to protect and maintain sage-grouse populations, land managers should minimize or halt actions that reduce suitability of nesting habitats within 3.1 miles of a lek. With an active sage grouse lek within 1.5 miles of proposed mining activities, and sage-grouse habitat within and surrounding the entire project areas, this DEIS analysis should review how the human footprint of this project will affect sage-grouse populations in the region.

B-6 Cont.

Wilderness

As described in the DEIS, the proposed action “would diminish or eliminate wilderness characteristics in the Project Area.” See DEIS at ES-15. These wilderness characteristics were first documented by the citizen-proposed Cottonwood Wilderness Study Area and confirmed in this DEIS. We calculate that 2,133 acres of these lands will be directly impacted by the mine proposals, or cut off from the wilderness by new roads developed under this proposal (see attachment A). The 1.4 mile Connector Road alone will cut off 886 acres of potential wilderness, and is unnecessary given the fact that there is an existing alternative route along Mill Gulch Access Road and Beede Access Road. Although the roads will be eventually reclaimed, with a minimum of a 50-year timeline for the mining operations, this decision will, for all practical purposes, remove the mining areas from consideration as wilderness when a future Congress takes up this issue and permanently impair this resource. Furthermore, BLM has failed to adequately analyze the impact on wilderness character that the proposed action will have outside the project area in the remaining Rocky Basin WIM. For example, will the opportunities for solitude continue to be *outstanding* in the diminished Rocky Basin unit if the project goes forward as proposed? Will the opportunities for primitive and unconfined recreation continue to be *outstanding* in the smaller area? The answer to both these questions is likely to be “no.” Wilderness is a public lands resource that cannot be permanently impaired or unduly degraded under FLPMA. In Oregon Natural Desert Ass’n v. BLM, 625 F.3d 1092 (9th Cir. 2010), the Ninth Circuit explained that lands with wilderness characteristics “are to be managed as part of the complex task of managing the various resources without permanent impairment of the productivity of the land and the quality of the environment,” that the agency has “ample discretion” under the multiple use mandate to manage lands with wilderness values, and that “wilderness values are among the resources which the BLM can manage under 43 U.S.C. §§ 1712 and 1732.” Also, as the court explained, wilderness is a resource BLM *must* study pursuant to NEPA.

B-7

Wildlife

As noted in the DEIS, this area serves as important habitat for a number of species, including winter range for big game, and habitat for sage-grouse and many species that use sagebrush. However, in conclusion, BLM determined that the project “would not contribute to a loss of viability for wildlife” and “would likely be unmeasureable to the affected populations.” See DEIS at ES-15. BLM explains that this is because wildlife are mobile, that they “would likely shift spatially into adjacent available habitat,” and that eventually the mine will be reclaimed. This conclusion is unacceptable. The BLM was created to help end tragedy of the commons issues associated with livestock grazing and other habitat-degrading uses, so it should not use justifications in this DEIS that leads to the same problems. If every individual project review concluded that wildlife would simply move to other habitat, then incrementally this would

B-8

eliminate the populations. Furthermore, any wildlife displaced by loss of habitat will compete directly with wildlife that is already using the habitat where they move to. This will result in the absolute demise of wildlife. Many avian species return to an exact location year after year (“site fidelity”) to nest and rear their young. The loss of these sites will cause the permanent loss of future offspring for these birds. Loss of habitat in these locations *will contribute* directly to a loss of viability to these species. Large mine pits, waste piles, new roads, fences, loud noises, trucks, and other activities associated with major mine projects are not small and cannot be categorized simply as “disturbances” throughout this DEIS. They have serious, long- term impacts to wildlife species, some of which do not have a 50-plus year time horizon to wait for habitat to return. On a related note, there is no mention of pygmy rabbits or Golden Eagles and the site should be assessed for potential habitat within the environmental review. We are concerned about potential impacts to these species.

Air Quality

The DEIS purportedly considers impacts to air quality in section 4.2, but no specific quantitative analysis is shown. At most, the DEIS predicts that the expanded Project will comply with all federal and state air quality standards (e.g., NAAQS), but no figures are given. The DEIS admits that there are no on-site monitoring data. “At present, the ODEQ does not conduct ambient air quality monitoring in the vicinity of the Project Area. The closest station is located in Buelah, Oregon, approximately three miles northeast of the Project Area.” DEIS at 4-8. Such lack of adequate baseline data violates NEPA. The Forest Service is required to “describe the environment of the areas to be affected or created by the alternatives under consideration.” 40 C.F.R. § 1502.15. The establishment of the baseline conditions of the affected environment is a fundamental requirement of the NEPA process:

NEPA clearly requires that consideration of environmental impacts of proposed projects take place *before* (a final decision] is made.” LaFlamme v. FERC, 842 F.2d 1063, 1071 (9th Cir.1988) (emphasis in original). Once a project begins, the “pre-project environment” becomes a thing of the past, thereby making evaluation of the project's effect on pre-project resources impossible. *Id.* Without establishing the baseline conditions which exist in the vicinity Y before [the project] begins, there is simply no way to determine what effect the proposed [project] will have on the environment and, consequently, no way to comply with NEPA.

Half Moon Bay Fisherman’s Mark’t Ass’n v. Carlucci, 857 F.2d 505, 510 (9th Cir. 1988). “In analyzing the affected environment, NEPA requires the agency to set forth the baseline conditions.” Western Watersheds Project v. BLM, 552 F.Supp.2d 1113, 1126 (D. Nev. 2008) (emphasis added). “The concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEP process.” Council of Environmental Quality, Considering Cumulative Effects under the National Environmental Policy Act (May 11, 1999).

B-9

B-10

Further, the DEIS admits that it has no numerical analysis of the Project’s air emissions regarding the NQs, VOCs, and other pollutants (except greenhouse gas emissions). “The PM10 and PM2.5 concentrations are expected to be below the OSAAQS and NAAQS, which are presented in Table 4.2-1 above. *The actual quantitative amount is not known.*” See DEIS at 412 (emphasis added). “Despite the lack of tailpipe emissions control technology for combustion sources throughout the Project Area, the PM2.5, CO, NO2, and SO2 concentrations are expected to be well below either the OSAAQS or the NAAQS, which are presented in Table 4.2-1. *The actual quantitative amount is not known.*” Id. (emphasis added)

Under NEP, BLM cannot simply postulate as to the actual extent of a Project’s impacts without having the necessary supporting data and analysis.

Under NEPA, “[a]gencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement.” Earth Island Inst. v. U.S. Forest Service, 442 F.3d 1147, 1159-60 (9th Cir. 2006) (quoting 40 CFR §1502.24). NEPA requires an agency to candidly disclose the risks of its proposed action and to respond to adverse opinions held by respected scientists. Seattle Audubon Soc’y v. Mosely, 798 F.Supp. 1473, 1482 (W.D. Wash. 1992) (citing Friends of the Earth v. Hall, 693 F.Supp. 904, 934, 937 (W.D.Wash. 1988)). “The agency may not rely on conclusory statements unsupported by data, authorities, or explanatory information.” Id. An agency has acted arbitrarily and capriciously when it fails to make a reasoned decision based on an evaluation of the evidence. Earth Island Inst., 442 F.3d at 1160.

Western Watersheds Project v. BLM, 552 F.Supp.2d 1113, 1129 (D. Nev. 2008). The Ninth Circuit has recently rejected a BLM EIS that failed to quantitatively ascertain the extent of air quality emissions, requiring modeling of Project emissions as a prerequisite for NEPA compliance. South Fork Band Council v. Dept. of the Interior, 588 F.3d 718, 727-28 (9th Cir. 2009). This DEIS must do the same.

Cumulative Impacts

The review of cumulative impacts is deficient. Chapter Five, which briefly mentions some of the cumulative impacts resulting from other past, present and reasonably future actions (RFF’s), fails to conduct the proper cumulative impact analysis as required by NEPA. BLM must consider direct, indirect, and cumulative environmental impacts of the proposed action. 40 C.F.R. § 1502.16; 40 C.F.R. § 1508.8; 40 C.F.R. § 1508.25(c). Direct effects are caused by the action and occur at the same time and place as the proposed project. Id. § 1508.8(a). Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Id. § 1508.8(b). Both types of impacts include “effects on natural resources and on the components, structures, and functioning of affected ecosystems,” as well as “aesthetic, historic, cultural, economic, social or health [effects].” Id. Cumulative effects are defined as the impacts resulting from the incremental impact of the proposed action when

added to other past, present, and reasonably foreseeable future actions. 40 C.F.R. § 1508.7. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. *Id.*

“The CEQ regulations require agencies to discuss the cumulative impacts of a project as part of the environmental analysis. 40 C.F.R. § 1508.7.” Davis v. Mineta, 302 F.3d at 1125 (10th Cir. 2002). “Of course, effects must be considered cumulatively, and impacts that are insignificant standing alone continue to require analysis if they are significant when combined with other impacts. 40 C.F.R. §1508.25(a)(2).” New Mexico ex rel. Richardson, 565 F.3d at 713, n. 36.

In a cumulative impact analysis, an agency must take a “hard look” at all actions. An EA's analysis of cumulative impacts must give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment. Without such information, neither the courts nor the public ... can be assured that the [agency] provided the hard look that it is required to provide.

Te-Moak Tribe of Western Shoshone v. Dept. of the Interior, 608 F.3d 592, 603 (9th Cir. 2010) (rejecting BLM EA for mineral exploration that had failed to include detailed analysis of impacts from nearby proposed mining operations).

A cumulative impact analysis must provide a “useful analysis” that includes a detailed and quantified evaluation of cumulative impacts to allow for informed decision-making and public disclosure. Kern v. U.S. Bureau of Land Management, 284 F.3d 1062, 1066 (9th Cir. 2002). The NEPA requirement to analyze cumulative impacts prevents agencies from undertaking a piecemeal review of environmental impacts. Earth Island Institute v. U.S. Forest Service, 351 F.3d 1291, 1306-07 (9th Cir. 2003). NEP’s obligation to consider cumulative impacts extends to all “past,” “present,” and “reasonably foreseeable” future projects. Blue Mountains, 161 F.3d at 1214-15; Kern, 284 F.3d at 1076. The Ninth Circuit decision in Great Basin Mine Watch v. Hankins, 456 F.3d 955, 971-974 (9th Cir. 2006) is particularly on point, as it required BLM to obtain and analyze “mine-specific Y cumulative data,” a “quantified assessment of their [other projects] combined environmental impacts,” and “objective quantification of the impacts” from other existing and proposed activities in the region.

Here, BLM’s analysis of the “cumulative impacts” from other projects within the “Cumulative Effects Study Areas” fails the standards recently confirmed by the Ninth Circuit in Great Basin and Te-Moak Tribe. Those cases directly refuted the BLM’s practice of only briefly mentioning the cumulative impacts of other projects in the area, with no quantitative analysis of the impacts from each of these other projects. For example, DEIS Tables 5.2-1 and 5.2-2 admit that there are numerous other “past, present, and RFFs” that will result in cumulative impacts but they merely lists the type of impacts, the acreages of the various projects/impacts, and the accompanying text merely provides a cursory description. That sort of analysis was specifically rejected by the Ninth Circuit in Great Basin. The DEIS contains no “quantified assessment of their [other projects] combined environmental impacts,” and no “objective quantification of the impacts” from these other projects, as required by Great Basin, 456 F.3d at 971-974.

B-12
Cont.

Overall, the DEIS fails to “give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment” as required by the court in Te-Moak Tribe, 608 F.3d at 603. The DEIS largely discusses the impacts from the current Project, with no quantified analysis of the impacts from the other projects – the same legal error made by the BLM in Great Basin and Te-Moak Tribe.

B-12
Cont.

The cumulative effects analysis is also deficient in regards to sage-grouse. Concluding that the sage-grouse will not suffer cumulative impacts from this project “because the vegetation communities within the Project Area are common over the surrounding landscape” is completely inaccurate. The reason why the species is likely to be listed is precisely because of cumulative impacts of incremental habitat fragmentation and loss. Cumulative impacts for this species should be taken into account across their entire range in Oregon and the fact that a 2009 study concluded that Oregon’s sage-grouse subpopulations have a 90-100% probability of declining below a sustainable population in 100 years if the carrying capacity continues to decline (*Grouse population dynamics and probability of persistence, Studies in Avian Biology, vol.38*). Habitat destruction caused by this mine project over a similar timeframe will contribute to this almost certain decline, and the agency should weigh this data into their environmental review. Furthermore, the cumulative impacts section reviews impacts to factors such as sensitive species, vegetation, water quality, air quality, and wildlife in isolation from each other. Since it is a “cumulative” review, there should be a concluding section that reviews the cumulative impacts of all of these impacts together.

B-13

Taken as a whole, ONDA does not see how this mining proposal could not be concluded to have unnecessary and undue degradation on the resources the agency must protect.

B-14

The Proposed Action Creates Permanent Impairment and Unnecessary and Undue Degradation

As the BLM recognizes in the DEIS, the “BLM is allowed to disapprove or withhold approval of a MPO (if) the MPO proposes operations that would result in unnecessary or undue degradation of public land as defined at 43 CFR 3809.415.” FLPMA requires that the BLM “shall Y take any action necessary to prevent unnecessary or undue degradation of the lands.” 43 U.S.C. § 1732(b). This is known as the “UUD” standard. As the leading FLPMA and mining federal court decision states, this duty to “prevent undue degradation” is “the heart of FLPMA [that] amends and supersedes the Mining Law.” Mineral Policy Center v. Norton, 292 F.Supp.2d 30, 42 (D.D.C. 2003).

FLPMA, by its plain terms, vests the Secretary of the Interior [and BLM] with the authority – and indeed the obligation – to disapprove of an otherwise permissible mining operation because the operation, though necessary for mining, would unduly harm or degrade the public land.

Id. “FLPMA’s requirement that the Secretary prevent UUD supplements requirements imposed by other federal laws and by state law.” Center for Biological Diversity v. Dept. of Interior, 623 F.3d 633, 644 (9th Cir. 2010).

BLM complies with this mandate “by exercising case-by-case discretion to protect the environment through the process of: (1) approving or rejecting individual mining plans of operation.” Id. at 645, *quoting Mineral Policy Center*, 292 F.Supp.2d at 44. The Ninth Circuit has stressed the “*environmental protection provided by the MPO [mining plan of operation] process.*” Center for Biological Diversity, 623 F.3d at 645 (emphasis in original).

B-15
Cont.

BLM cannot approve a mining plan of operations that would cause “unnecessary or undue degradation.” 43 C.F.R. § 3809.411(d)(3)(iii). BLM’s mining regulations further require that all operations “must take mitigation measures specified by BLM to protect public lands.” 43 CFR § 3809.420(a)(4). In addition, BLM must ensure that all operations comply with the Performance Standards found at §3809.420. *See* 43 CFR §3809.5 (definition of UUD, specifying that failing to comply with the Performance Standards set forth at §3809.420 constitutes UUD). *See also Center for Biological Diversity*, 623 F.3d at 644-45 (illustrating some of the §3809.420 Performance Standards that must be met to comply with the duty to prevent UUD).

Further, the Interior Department has also repeatedly held that compliance with FLPMA cannot be waived by BLM due to the fact that the costs of compliance would render the mining operation uneconomic and the mining claims invalid.

[I]n determining whether a discovery exists, the costs of compliance with all applicable Federal and State laws (including environmental laws) are properly considered in determining whether or not the mineral deposit is presently marketable at a profit, i.e. whether the mineral deposit can be deemed to be a valuable mineral deposit within the meaning of the mining laws. If the costs of compliance render the mineral development of a claim uneconomic, the claim, itself, is invalid and any plan of operations therefor is properly rejected. *Under no circumstances can compliance be waived merely because failing to do so would make mining of the claim unprofitable.*

B-16

Great Basin Mine Watch, 146 IBLA 248, 256 (1998)(emphasis added)(decision of the Interior Board of Land Appeals). Regarding the requirement for the operator to provide sufficient information to demonstrate that the proposed mining operation will not cause undue degradation, the Ninth Circuit has stated that “BLM not only has the authority to require the filing of supplemental information, it has the obligation to do so.” Center for Biological Diversity, 623 F.3d at 644, *quoting Great Basin Mine Watch* at 256.

B-17

Overall, these mandates represent a nondiscretionary duty on BLM to protect public lands, including as acknowledged by BLM the duty to “protect non-mineral resources of federal lands, including groundwater and surface water” from the types of environmental harms caused by the Project. BLM has failed to do so in this case.

B-18

In order to meet these duties in this case, BLM must, at a minimum, require the operator to prevent undue degradation to the Wilderness Characteristics. Currently , the DEIS predicts that roughly 4,338 acres of lands with Wilderness values will be “diminished or eliminated.” *See* DEIS at ES-15, 4-118. Under FLPMA, the agency must prevent such undue degradation and must impose “mitigation measures to protect public land” that will preclude these significant impacts to this extremely valuable resource.

Further, BLM must prevent undue degradation to Greater Sage-Grouse and other sensitive or candidate species. BLM admits that the Project (alternatives 2 or 3) will have significant adverse impacts to these species. See DEIS at 4-72 to 4-75. The DEIS does not contain sufficient “mitigation measures to protect” these species, as required by the Part 3809 Performance Standards. At a minimum, this means that the Project should be revised to implement the Oregon Sage-Grouse Plan discussed herein. This rule supercedes any requirement to provide mining companies unlimited access to public lands under the 1872 Mining Law.

B-20

Alternative 3 Does Not Provide a Less Damaging Alternative than the Proposed Action

It is BLM’s duty to provide for reasonable alternatives that decrease the impacts of a proposal to public land values and natural resources. While BLM states that it has “identified resource-specific measures as additional environmental protection measures” to be included in Alternative 3 “for environmental protection,” it fails to do so.

NEPA requires the agency to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources.” 42 U.S.C. § 4332(E); 40 C.F.R. § 1508.9(b). It must “rigorously explore and objectively evaluate all reasonable alternatives” to the proposed action. City of Tenakee Springs v. Clough, 915 F.2d 1308, 1310 (9th Cir. 1990).

B-21

The “alternatives” section is “the heart of the environmental impact statement.” 40 C.F.R. § 1502.14. “The consideration of alternatives requirement ... guarantee[s] that agency decisionmakers have before them and take into proper account all possible approaches to a particular project (including total abandonment of the project) which would alter the environmental impact and the cost-benefit balance.”

Pit River Tribe v. U.S. Forest Service, 469 F.3d 768, 785 (9th Cir. 2006).

BLM says that Alternative 3 is the same as the proposed action, except for these additional elements, which include “fenced mine areas, one additional access road, a locked gate, removal of a sediment basin, maintenance of an existing stock water pond, and installation of new stock watering ponds.” Above and beyond the impacts associated with the proposed action, this list alone will create the following new impacts:

B-22

- The construction of Eagle Cutoff Road will remove an additional 142 acres from consideration as wilderness. To say the road “would have essentially the same impacts” as the proposed action because it will be reclaimed is not accurate. See DEIS at 4-77. As depicted in Attachment B, this action is 1.5 miles from a Sage-Grouse lek and will further fragment Core 1 Sage-Grouse Habitat at a time when we cannot afford fragmentation. It is also on the edge of elk winter range and will directly impact native plants and habitats along the half mile of road construction. How BLM can state that “Alternative 3 would not otherwise result in additional impacts from noxious weeds” does not make sense because roads and soil disturbance are primary factors in the spread of noxious weeds. See DEIS at 4-49

B-23

- The development of 10.5 miles of new fence in designated Core 1 and low density habitat will negatively impact sage-grouse populations that move through this area, and create barriers for big game within and on the edge of their winter range. As you can see in Attachment B, Core 1 Habitat covers most of the Celatom Project Boundary, as well as almost all of the proposed fencing in Alternative 3. A recent study by Wyoming Fish and Game found 146 sage-grouse collisions or deaths over a 20-month period along a 4.7 mile fence (study by Tom Christiansen, Sage-Grouse Program Coordinator, October 26, 2009). Alternative 3’s fence proposal is more than twice this length. Furthermore, to claim that removing two miles of fence is somehow mitigating the impacts of the 10.5 miles of new fence is completely untruthful. Both fences removed will have equal distances of fence installed parallel to them within a couple hundred feet.

B-24

- New water tanks for livestock will be installed and maintained in the Puma Claims Operation Area, which will create more intensive livestock grazing and impacts in the vicinity, impacting sage-grouse in Core 1 habitat through the direct loss of habitat as well as new threats from West Nile Virus. There is only one sentence about new water tanks at the Puma Claims Operation Area, without an explanation of need or a description of the impacts from the increased grazing and West Nile Virus threats that will result. It is explained that there will be an overall loss of 250 AUMs under Alternative 3 over the four grazing allotments, but it does not explain the need for these particular water developments on the edge of one grazing allotment in Core 1 sage-grouse habitat.

B-25

An Improved Alternative 3 Should be Considered

The BLM should pursue an Alternative 3 that actually does what it sets out to do in the DEIS, and create an alternative for “environmental protection.” It would only make sense that a public agency would create an alternative that creates the least impact and fulfills it legal obligation to maintain the true definition of “multiple use” as defined by FLPMA:

“a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and non-renewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output.”

26

Roads – Alternative 3 should eliminate three sections of proposed roadways and instead direct traffic onto existing roads on public and private lands (see recommendations on Attachment A).

The Connector Road is unnecessary, as there is an existing alternative route that only adds 1.4 miles of driving between Section 36 and Hidden Valley along Mill Gulch Access Road and Beede Access Road. Eliminating this road will maintain wilderness character on more than 886 acres of

land within the Rocky Mountain WIM. The northern end of the Hidden Valley & Eagle Road, above the mine pit, unnecessarily extends into wilderness character lands, cutting off at least 63 acres. The road disturbs Core 1 Sage-Grouse habitat and is proposed down a steep gradient that will create unnecessary environmental degradation. Traffic should instead be re-routed back to the Beede Access Road to connect with the Beede Desert Road along flatter terrain, adding very minimal driving distance between Hidden Valley and Eagle proposed sites. Eagle Cutoff Road, which cuts off at least 142 acres of wilderness character lands, and disturbs Core 1 Sage-Grouse habitat, is unnecessary and traffic can instead be routed on the existing road to its south, which connects with the intended Cottonwood Reservoir Road. BLM is not required to destroy natural resources to create the most convenient route for mining operations, when there are reasonable alternatives already existing on the ground.

B-27
Cont.

Mine Pit – Figure 3.2.3 of the DEIS depicts two proposed massive open pits and waste stockpiles next to each other in the North Kelly Field Mine Operations Area. These pits are separated by a road which defines the eastern edge of the Rocky Basin WIM. Alternative 3 should exclude the proposed West Open Pit, allowing 256 acres of public lands to maintain in wilderness character. The DEIS does not explain why it is necessary to have two adjacent mine pits at this location, and because one of them destroys the wilderness character that BLM must protect, it should be eliminated from a alternative aimed at environmental protection.

B-28

Fences – No new fencing should be installed in Alternative 3, for the reasons described above. However, if any fences are authorized in the project area, which all contain agency-recognized sage-grouse habitat, they must be flagged conspicuously to protect sage-grouse. The Wyoming Fish and Game study referenced above, which showed high fence mortality to sage-grouse due to collision, also concluded that flagged fences can reduce sage-grouse mortality by 61 percent.

B-29

Water tanks – There should be no new water development proposed in Alternative 3. As described above, they only lead to increased impacts and do not belong in an alternative aimed at environmental protection.

B-30

Wilderness Character Lands and Areas South of Puma Claims – Alternative 3 should include a provision that was considered in this DEIS that “would have eliminated the portion of the Project Area that was within the BLM’s Rocky Basin Wilderness Inventory Maintenance (WIM) unit.” See DEIS at 3-47. At a minimum, Alternative 3 should eliminate all of the Rocky Basin WIM that remains after the proposed project is developed from exploration drilling and any future mining development. At a minimum, protecting the wilderness character and sage-grouse Core 1 habitat on the roughly equal amount of remaining wilderness character lands in the project area following completion of this proposed mining operation should be required. Likewise, the BLM should reconsider their alternative that “would have eliminated the portion of the Project Area that is south of the Puma Claims Area and thus eliminated exploration activities in the Sagebrush Flat area.” Id. This area contains Core 1 sage-grouse and big game habitat and Alternative 3 should preclude future mining activities in this area, including any exploration drilling proposed in this action, as well. BLM does not describe why this beneficial alternative was not considered.

B-31

BLM Should Support Alternative 1

As described in the DEIS and in this letter, the proposed action would create unnecessary and undue degradation to public lands that serve as key habitat for sage-grouse and other species and contain lands with wilderness character that must be managed to maintain that character. Therefore, ONDA recommends that BLM choose the “no action” alternative. Furthermore, ONDA requests that BLM improve their EIS to further detail the real impacts of this proposal and at the very minimum, create an Alternative 3 that decreases impacts from the proposed action, not increases them. Ultimately, a project of this size and magnitude has impacts that will significantly impair natural resources and should not be allowed. Alternative 1 is the preferred alternative.

B-32

Thank you for the opportunity to comment on this proposal. We hope the BLM will use these comments to improve their environmental review to better protect the precious natural resources of Oregon’s high desert.

Sincerely,

Matt Little
Conservation Director

William Droyt

BLM

RECEIVED

5-20-2011
MAY 23 2011

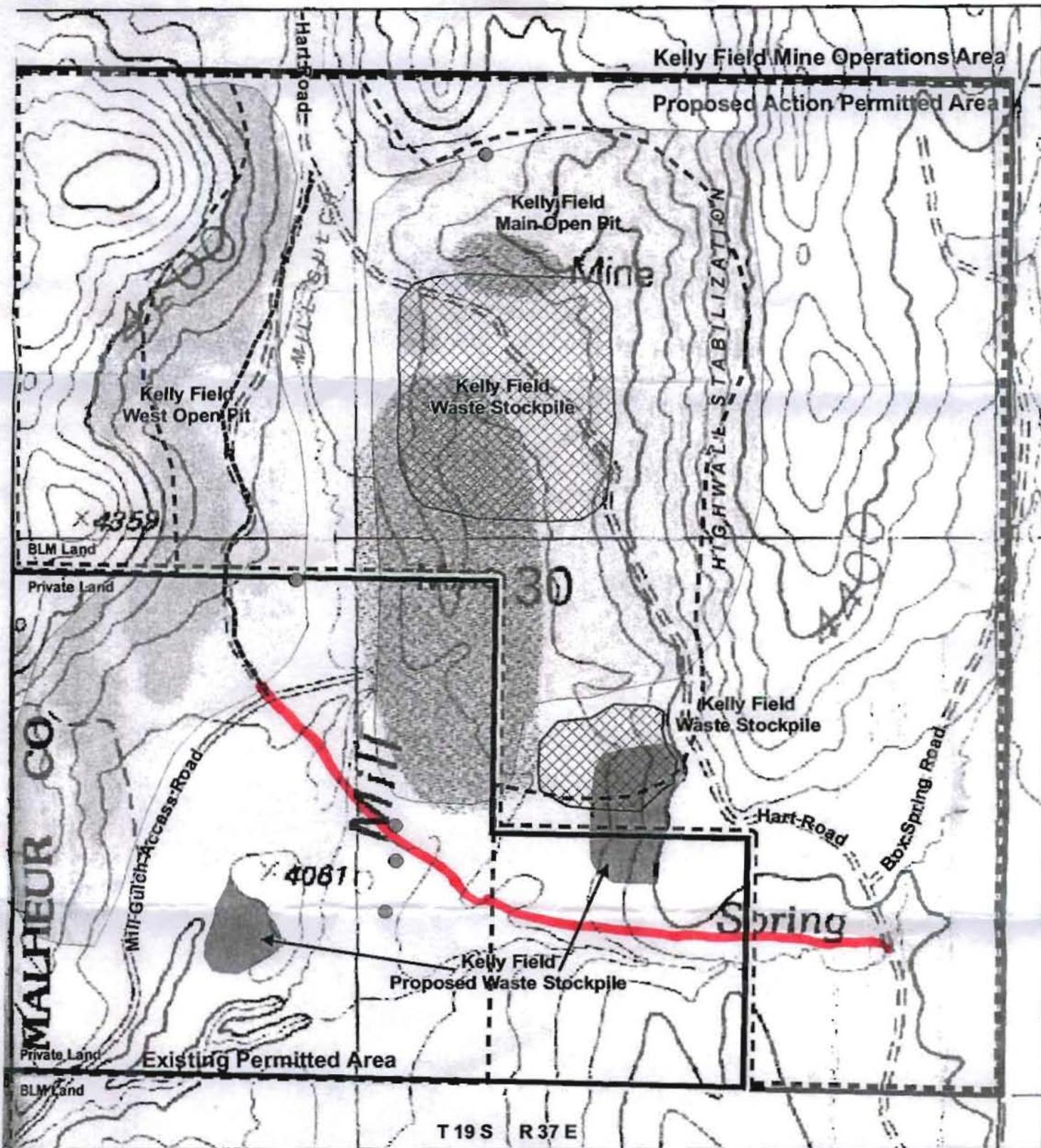
BLM - BURNS DISTRICT

My comments on Celatom Mine Expansion
Project

I support Alternative 2
also I propose the change of The
Hart Road see inclosed map

Anthony Joyce

Anthony W. Joyce



Explanation

Kelly Field Mine Operations Area	Existing Roads
Kelly Field Final Open Pit Limits	Existing Permitted Area
Kelly Field Existing Waste Stockpiles	Proposed Action Permitted Area
Kelly Field Proposed Waste Stockpiles	Public Lands
Sediment Basins	State Land (Not Subject to Proposed Action)
Kelly Field Public Road Detour	Private Land (Not Subject to Proposed Action)
	Split Estate with Federal Minerals (SRHA*) on Private Land

0 100 200 300 400 500 Meters

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data.

BUREAU OF LAND MANAGEMENT
 BURNS DISTRICT OFFICE
 28910 Highway 20 West
 Hines, Oregon 97738

CELATOM MINE EXPANSION PROJECT

Proposed Action
Kelly Field Mine Operations Area

Figure 3.2.2

5-10-11

Letter D

MARK JOYCE RANCH
JUNTURA, OREGON

2925 Beulah Road
Juntura, Oregon
97911

To Whom It Concerns:

Comments for purpose WSA Rocky Basin.

We have private property in this area and have a road to it that we do not want closed, we have used it for many years.

The Juntura Road District has also maintained these roads in the past.

Rancher
Chairman Juntura Road District

A handwritten signature in cursive script, appearing to read "Mark Joyce".



Letter E

MALHEUR COUNTY

COUNTY COURT

251 B Street West, #5 . Vale, Oregon 97918 . (541) 473-5124 . Fax (541) 473-5576

May 12, 2011

Bill Dragt
Supr. Natural Resource Spec.
BLM – Burns District
28910 Hwy 20 West
Hines OR 97738

Sent via email only

Dear Mr. Dragt:

It has come to our attention that a wilderness is being considered in the Northeast Corner of Harney County and a road closure is being sought in Rocky Basin, North of the Eagle Picher mine.

This Court has received objections to this wilderness and road closure from the local users, knowing the county has maintained this road in the past. As Malheur County Judge, I would concur we do not need anymore wilderness or road closures that affect the customs and culture of the local area.

Sincerely,

Dan P Joyce
Malheur County Judge

copy via email: Congressman Walden
Senator Wyden
Senator Merkley
Representative Cliff Bentz
Senator Ted Ferrioli
Doug Knott, OHA Malheur County
Harney County Judge Steve Grasty

5-10-11

Letter F

**MARK JOYCE RANCH
JUNTURA, OREGON**

2925 Beulah Road
Juntura, Oregon
97911

RECEIVED
MAY 16 2011
BLM - BURNS DISTRICT

To Whom It Concerns:

Comments for purpose WSA Rocky Basin.

We have private property in this area and have a road to it that we do not want closed, we have used it for many years.

The Juntura Road District has also maintained these roads in the past.

Rancher
Chairman Juntura Road District



TIME SHEET for Rural Road District #11

MONTH OF: JUNE, 2003 EMPLOYEE'S NAME: Tom White

Day/Date	Brief Description of Work Done	Hours
Sunday, 1	Blade to McEwen Lane.	9
Tuesday, 3	Blade to Harney Line. Blade Swamp Creek road.	14
Wednesday, 4	Blade Visher Creek Rd, Riverside-Crowley road to Bar Hart Reservoir, blade McEwen road-connectors.	14
Thursday, 5	Blade from Chapman's to Levanger seeding CG	13
Monday, 9	Blade Levanger CG to town. Switch sides on cutting edges.	13
Tuesday, 10	Blade new gravel Whitley to Beulah. Ditch and blade from Butler Y to CG above Yarboro. Fix mirror on 140G	14
Wednesday, 11	Ditch and blade to bottom of Lost Creek Grade.	13
Friday, 13	Blade and widen over top from Lost Creek to Elwoods.	10
Saturday, 14	Blade to Lockhart and forest boundary (140G and 16) to Butler Y.	14
Tuesday, 17	Blade Hunter Ranch and to Woody's. Move #16 to town.	11
Wednesday, 18	Change oil and filters on #16 @8000 hrs. New cutting edges, grease. Work on 140G radios, fire extinguisher,	12
Thursday, 19	Clean CG by Jim's and across from Joe.V. on Beulah. Move 966 to Halliday CG and backhoe to town for Tim L. and town barbecue.	8.5
Friday, 20	Finish radio in 140G and new battery cable in 99 pickup. Clean CG above Chukar Park.	8.5
Monday, 23	Clean five CG on Beulah Road.	12
Wednesday, 25	Clean CG by Warm Spring. Move loader, trucks and blade to Mark's alfalfa pit. Trim trees into Mill Gulch. Check gravel above Altnow Reservoir.	12.5
Thursday, 26	Blade into Mill Gulch. Haul 3 loads from Alfalfa Pit.	13.5
Friday, 27	Haul and blade 5 loads at Mill Gulch.	13
Monday, 30	Haul 5 loads and blade at Mill Creek.	13
	TOTAL HOURS:	218

*Pd 6/30/03
Chk # 7388*

Other Claims for Reimbursement:

TIME SHEET for Rural Road District #11

MONTH OF: JuneEMPLOYEE'S NAME: John White

Day/Date	Brief Description of Work Done	Hours
6-1-03 6-1-03	Spraying - Juntura - Jones place	9 1/2
6-2-03	Spraying - Jones place - Airport Cattle guard	15
6-3-03	Spraying - Agandy - Bantline - to ^{to} the ^{the} Nelson Lake - Carlin	13
6-4-03	Spraying - Juntura - Sherman - Granite Creek - to Riverside	13
6-5-03	" Juntura - Riverside	9 1/2
6-6-03	" Riverside - Hungry Cotine - Swamp Creek	9
6-9-03	" Around Juntura - cleared eg - Helped change back bite	11
6-10-03	cleaning Ditch of Weidaning ^{with tractor} - Holman Grove - last creek pipe	12 1/2
6-11-03	Blade work - Castle Rock Ranch - last creek	13
6-14-03	Blade work - Butler Cow Camp - Forest Boundary ^{brought} ^{machines back to Boffar}	14 1/2
6-17-03	Flat on 140 - took to Ontario for Repair ^{ports} ^{return pickup}	11
6-18-03	Servicing 16 - Mechanic work Black truck - working on Radio and Fire ext. Installation in 140	11
6-19-03	Roadside task force Mending fractland Idaho - to Radio Shack for Antenna Connector	7
6-20-03	Reinstall Radio Replace Battery cable in green pickup - clean Holiday cattle guard	8
6-23-03	cleaned 5 cattle guards	12
6-25-03	cleaned warm spring creek cattle guard - moved eg - to Searly Hayer pit - <u>went to mill gulch</u> <u>trimming juniper to get eg. this</u>	12 (18 1/2)
	pd 6/27/03	
	CHK# 7386	

Other Claims for Reimbursement:

Radio Shack 4.99 - for Antenna Part.
 Hi Wheeler & Sprayer - 7 days @ \$50/day - \$350

TIME SHEET for Rural Road District #11

MONTH OF: June

EMPLOYEE'S NAME: Toby Joyce

Day/Date	Brief Description of Work Done	Hours
Wed. 6-18-03	Serviced Equipment	10
6-19	Cleaned Cattle guards on Beulah Rd.	8
6-20	Cleaned Cattle guards " "	6
Mon. 6-23	Cleaned Cattle guards / Moved Equipment	12 1/2
6-24	Cut Pipe for Cattle guards	6
6-25	Hauled gravel to Mine road / 2 Loads ^{cleaned cattle} guards	10 1/2
6-26	Hauled gravel to Mine road / 2 Loads	9
6-27	Hauled gravel " " / 15 Loads	13
Mon. 6-30	Hauled gravel " " / 6 Loads	13
	Total Hours	98
	Pd 6/30/03	
	Chk # 7387	

Other Claims for Reimbursement:

TIME SHEET for Rural Road District #11

MONTH OF: July EMPLOYEE'S NAME: Toby Joyce

Day/Date	Brief Description of Work Done	Hours
Tues. 7-1	Hauled gravel to Mine Road / 5 Loads	12
7-2	Moved Equipment / Serviced	6
7-3	Washed & Serviced Equipment	11
7-4	Moved roller & Grader / Serviced Equip.	11
Mon. 7-7	Hauled gravel to Shumway 5 Loads	13
7-8	Changed Tire / Hauled 6 Loads	13
7-9	Hauled 4 Loads	10
7-10	Put in Cattle guard at Shumway / Worked on Truck	13
Mon. 7-14	Fixed White Truck / Hauled 10 Loads at Shumway	13 1/2
7-15	Hauled 15 Loads at Shumway	12 1/2
7-16	Hauled 17 Loads at Shumway	13
7-17	Hauled 17 Loads at Shumway	13
7-18	Worked on White Truck drove it to Juntura	4
Tues. 7-22	Hauled 5 Loads at Shumway	6
7-23	Hauled 10 Loads at Shumway	13
7-24	Hauled 9 Loads	13
7-25	Hauled 9 Loads	12 1/2
7-26	Hauled 10 Loads	13
7-27	Changed Tire / Drove Truck to Juntura	6
7-28	Took Tires to Ontario	4
7-29	Cleaned pipes at Shumway / Brought Backhoe to Juntura	12 1/2
7-30	Serviced Trucks / Moved Equipment to Cold Springs	12
7-31	Cleaned Pipes with Backhoe at Beulah Rd.	10
	Total Hours	247

Pd 7/31/03

CRK# 7409

Other Claims for Reimbursement:

TIME SHEET for Rural Road District #11

MONTH OF: MAY, 2004 EMPLOYEE'S NAME: Tom White

Day/Date	Brief Description of Work Done	Hours
Saturday, 1	To Burns for #16 tire and replacement wheel, remount on #16.	5
Monday, 3	Move #16 to Cottonwood. Check road with Mark, clean drain ditch between S. Fork bridge and railroad in town.	10.5
Tuesday, 4	Blade up through Wilburs to Cottonwood and Mark's cabin.	12.5
Wednesday, 5	Finish Mark's lower road to Catterson. Start upper road to Ott Mt.	14
Thursday, 6	Finish waterbars on top road above Mark's toward Ott Mt.	11
Monday, 10	To Cottonwood, finish balding through Palmer, move #16 to Juntura. Raining.	5.5
Tuesday, 11	Blade town to 3 Valleys feedlot. Move #16 to new culvert past Monument Peak Rd.. CAT worked on 140G and black '87 AC.	12
Wednesday, 12	Haul 9 loads past Monument Road, blade.	12.5
Thursday, 13	Hauled 11 loads along Jones Fence. Haul 1 load to pipe by Juan's house.	13
Friday, 14	Haul 3 loads along Jones Fence. Blade and roll new gravel. One load to JB. Gilmer working on jakes in PM	7
Monday, 17	Dig out pipe Terry changed by Juan's. Tighten leaking band, remove mud, cover with rock.	11
Tuesday, 18	Empty garbage, figure hours for Hot Spring reimbursement. Haul 10 loads S. Fork to town and blade.	12
Wednesday, 19	Haul 3 loads to Jones fence, one load to Juan's pipe, blade new gravel by Juan's. Help Tim Lister around arena.	8
Thursday, 20	Haul 9 loads to top of grade, blade, remove leaking battery in black '87 and hose on 966.	13
Friday, 21	To Boise to repair CAT hydraulic hose for 966, buy grease couplers and filters, truck battery at Les Schwab, acetylene tank repair at Norco.	8
Monday, 24	Replace hose and seal on 966, add hydraulic oil, replace battery in black '87, unload filters, etc.	3.5
Thursday, 27	Check with Gilmer in Burns on repairs.	0.5
TOTAL HOURS:		159

Other Claims for Reimbursement:

Pd 5/31/04
CAL# 7534

TIME SHEET for Rural Road District #11

MONTH OF: May

EMPLOYEE'S NAME: John White

Day/Date	Brief Description of Work Done	Hours
5-3-04	Moved loader to Grade - at end of road Field 4- loads 36" pipe Jones Field	10 1/2
5-4-04	trimming trees in cotton wood	12 1/2
5-5-04	" " " " "	14
5-6-04	" " " " "	10 1/2
5-10-04	finished in cotton wood	5 1/2
5-12-04	10 Loads - Jones Field	12 1/2
5-13-04	11 " " " " 1 Load terry pipe	13
5-14-04	3 " " " " to Ontario for fire Repair	9
5-17-04	1 " " " " - 3 loads on terry pipe - had to dig out and re-install	11
5-18-04	11 Loads - Malheur River to Gary Williams	6
5-19-04	3 loads Jones Field - 3 loads terry pipe	8
5-20-04	9 loads Tundra Grade	10 1/2
		<u>123</u>

Pd 5/24/04
Cnr #7533

Other Claims for Reimbursement:

