

1792/1310 (040)  
Salt Wells  
3D Geophysical Project

May 18, 2004

CERTIFIED – 7003 3110 0005 3352 7275 – RETURN RECEIPT REQUESTED

Dave Welch  
Oregon-California Trails Association  
102 Chinook Lane  
Steilacoom, Washington 98388

Dear Mr. Welch:

Attached you will find the Decision Record, Finding of No Significant Impact, and Environmental Assessment for GEOTIR Salt Wells.

The environmental assessment was prepared after a 30-day public comment period. All issues raised during the comment period have been considered.

The Bureau of Land Management (BLM) appreciates the public's participation during preparation of the environmental analysis. The documents can be found on the BLM Rock Springs Office's website. The address the BLM Rock Springs website is <http://www/w.blm.gov/rsfo/index.htm>. Copies are also available at the BLM Rock Springs Field Office in Rock Springs.

If you have questions about this action, please call John MacDonald at (307) 352-0238 or Teri Deakins at (307) 352-0211/

Sincerely,

/s/ Susan J. Davis

Susan J. Davis  
Acting Assistant Field Manager  
Lands and Minerals

Attachment

# **SALT WELLS 3D GEOPHYSICAL PROJECT**

## **ENVIRONMENTAL ASSESSMENT and FINDING OF NO SIGNIFICANT IMPACT and DECISION RECORD**

WYW-040-EA04-129

Prepared by:

Rock Springs Field Office  
Bureau of Land Management  
Rock Springs, Wyoming

May 2004

**SALT WELLS 3D GEOPHYSICAL PROJECT  
ENVIRONMENTAL ASSESSMENT  
WYW-040-EA03-129/WY-040-OG-04-01**

**INTRODUCTION**

GeoTir Corporation (GeoTir) filed a Notice of Intent on January 13, 2004 to conduct a 3D seismic survey on public lands within the administrative area of the Rock Springs Field Office (RSFO). The project area covers approximately 11 square miles or 5,160 acres, and is roughly 5.5 miles by 5.5 miles. Of the total acreage in the project area, 4,520 acres are BLM-administered public land, 480 acres are state-owned land, and 160 acres are private land. Lands affected by the proposed project in the Elk Butte and Laney Canyon area include:

T14N, R103W Sections: 1-4, 9-16, 22-24  
T14N, R102W Sections: 6, 7, 18, 19  
6<sup>th</sup> Principle Meridian, Sweetwater County

**Need for the Proposed Action**

The Salt Wells 3D Project (SW3D) is needed to acquire and evaluate subsurface geological data for possible development of oil and gas reserves. All federal minerals within the SW3D have been leased for oil and gas development or are available for lease. The proposed project is designed to collect subsurface data with minimal surface disturbance which could enable wells to be drilled with a much greater probability of successfully locating hydrocarbons than is attainable without 3D geophysical exploration. Completion of the project should result in the drilling of fewer 'dry holes' in the future, thereby reducing the associated surface disturbance.

**Conformance with Land Use Plans**

The proposed action is subject to the Green River Resource Management Plan (GRRMP) Record of Decision approved October 1997. The RSFO, as required by 43 CFR 1610.5, has determined that the proposed action, with the modifications herein applied, is in conformance with the decisions, guidelines, terms and conditions of this land use plan (p 15).

The RMP allows for vehicle travel off-road to accomplish necessary tasks, provided such travel would not result in resource damage. Following approval by the BLM, surveyors, wildlife biologists, and archeologists working on project planning and inventories, as well as geophysical crews, could conduct necessary tasks under these conditions.

**Relationship to Statutes, Regulations, or Other Plans**

This Environmental Assessment was prepared in accordance with the National Environmental Policy Act of 1969 (NEPA), as amended and the Mineral Leasing Act of 1920, as amended (Code of Federal Regulations at 43 CFR 3150).

The proposed action is in compliance with the State of Wyoming Land Use Plan (1979) and Sweetwater County Land Use Plan (1996) and complies with other relevant federal, state, and local laws and regulations.

The development of this project would not affect the achievement of the Wyoming Standards for Healthy Rangelands (August 1997).

## Public Involvement

The BLM issued a Scoping Notice on February 4, 2004, allowing a 30-day comment period on the proposal. The Notice was sent to 129 individuals or organizations. A news release was published in the Rock Springs Rocket-Miner and the Casper-Star Tribune. Comments were received from the following sources in response to the outreach:

- Biodiversity Conservation Alliance-Laramie
- Deborah Mellentim-Rock Springs
- Oregon-California Trails Association
- Petroleum Association of Wyoming-Casper
- Gail and Bill Robinson-Green River
- Bill Spillman-Rock Springs
- U.S. Fish and Wildlife Service-Cheyenne
- Wyoming Game and Fish Department-Cheyenne
- Wyoming State Historic Preservation Office-Cheyenne

Issues identified during the scoping period include:

- Raptor nesting habitat
- Greater sage-grouse habitat
- Big game winter ranges
- T/E Species
- Sensitive Species
- Steep slopes
- Salt Wells Creek, springs, riparian/wetland areas
- Cultural Resources including Historic Trails
- Mineral Resources development
- Socio-Economic Impact

Certain issues were determined to be not "significant... related to the proposed action" (40 CFR 1501.7) because they are not potentially affected or impacted by the proposal. In accordance with 40 CFR 1501.7(3), these issues brought forth during public scoping and reason/s for eliminating that issue from consideration in this analysis are described below:

**Sustained Energy** – The purpose of the action is to gather subsurface geologic data only. No development of energy resources is proposed for this project.

**Jack Morrow Hills Coordinated Activity Plan/Red Desert Area** – The proposal occurs outside the geographical areas under review in the Jack Morrow Hills planning effort and the Red Desert.

**Wilderness** – This area has not been identified as having wilderness characteristics and is not near any designated wilderness areas.

## DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

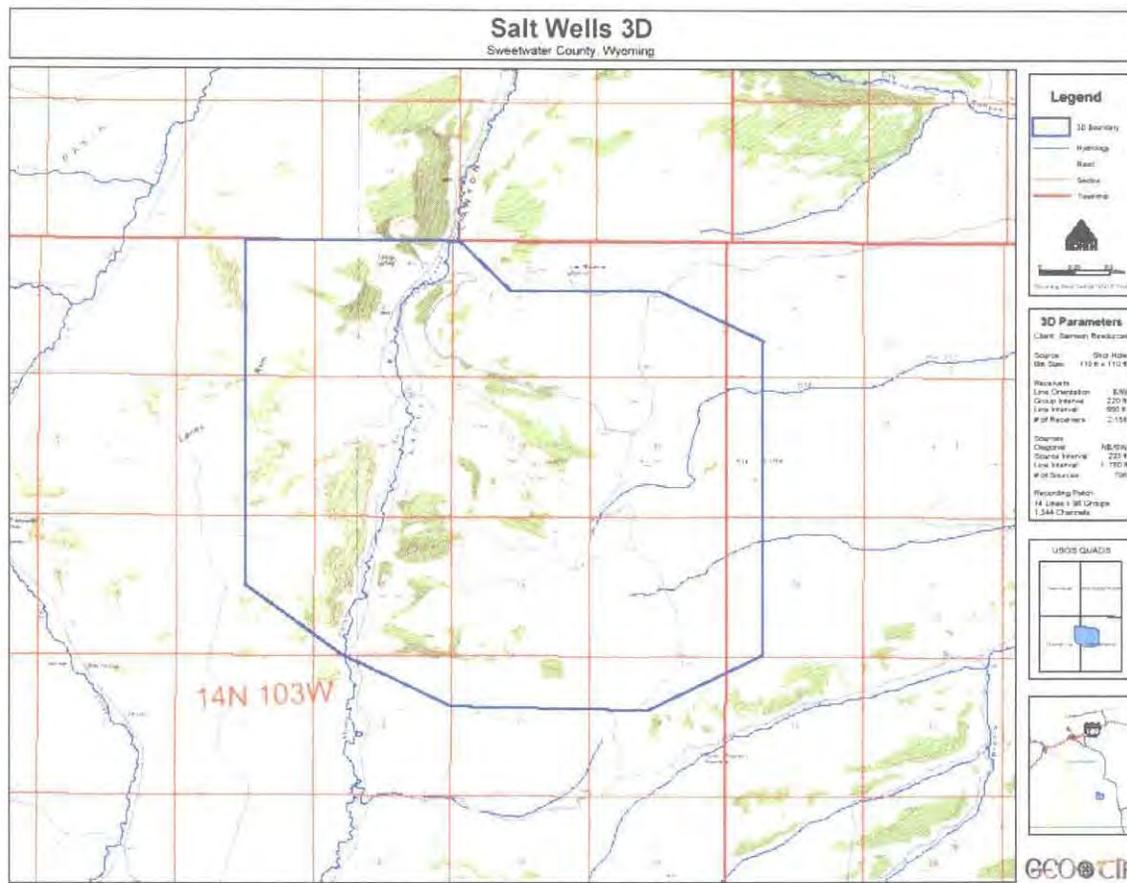
### Proposed Action

The 3-dimensional seismic survey would cover an area of approximately 11 square miles. Survey crews would identify and stake the predetermined locations of the approximately 798 source stations (shot-holes) spaced at 311-foot intervals along approximately 20 lines (source lines) spaced 1760 feet apart across the project area and totaling approximately 32 miles in length. The source lines run in a generally northeast/southwest direction. In addition, the survey crews would identify and stake the predetermined locations of the approximately 2,158 receiver stations (receivers) along approximately 27 lines (receiver

lines) spaced at intervals of 660 feet apart and totaling approximately 89 miles in length. The receiver lines would run in a generally east/west direction. The source and receiver locations may vary slightly to facilitate access or to avoid environmentally sensitive areas.

No heavy equipment would be used for removing or clearing vegetation. No trees would be cut down and no clearings would be established.

Survey crews would temporarily flag and stake the receiver locations (where cables and geophones would be temporarily placed on the ground) and the source locations (where the shot-holes would be drilled) utilizing Global Positioning System (GPS). There would be 3-4 survey crews with 1-2 personnel on each crew. The survey crews would use ATV's for transporting personnel and equipment. Surveying operations would commence as soon as surface conditions allow and is expected to be completed in approximately 10 days.



Drilling operations would commence upon completion of surveying and clearance of cultural and wildlife resources and be completed in approximately 20 days. The drill trucks and the drill buggies would traverse the drivable portions of the source lines in order to drill the shot-holes, except for environmentally sensitive areas. Each drill crew will consist of 2-3 crew personnel. No surface disturbing activity will be allowed on slopes greater than 25% on the sidewalls of Laney Canyon.

Shot-holes would be drilled at intervals of approximately 311 feet along each source line. However, the distance between shot-holes may be modified to avoid sensitive areas or physical obstacles. Shot-holes would be drilled to a maximum of 40 feet in depth and be approximately 4.5 inches in diameter.

The charge would consist of 4.4 lbs. of explosive. Shot-holes would be drilled using three types of equipment, depending upon the local terrain:

1. Truck-mounted drills would be used in generally flat terrain
2. Buggy-mounted drills would be used in rougher terrain but terrain still accessible to wheeled vehicles
3. Heli-portable drills which would be used in terrain too steep and rough for access by drill-mounted buggies or drill-mounted trucks.

Recording operations would commence after drilling and are expected to be completed in approximately 8 days. A helicopter would be used to transport the recording equipment (cables, geophones, etc.) to central locations along the receiver lines, and 5-6 man crews would walk along the receiver lines while temporarily laying out the cables and geophones. The cables would be connected to the truck-mounted recording equipment.

Groups of geophones would be connected to the cables and placed on the ground in a circular pattern at intervals of about 311 feet. After the spread of cables and geophones are laid out, (the spread consists of a maximum of 14 receiver lines with a maximum of 96 receivers per line), the explosives would be detonated one hole at a time in a sequential manner and the data recorded. A crew of 3-4 people would utilize all-terrain vehicles (ATV), 4-wheelers, or walk along the lines to find and repair any electrical problems.

Upon completion of recording operations through an area, the crews would walk the lines to disconnect and bag the cables and geophones and then be picked up by helicopter and transported to the next portion of the project to be recorded. Flagging, stakes and litter would be removed at this time. The recording crew would consist of approximately 20-25 individuals. Shot holes would be backfilled and plugged according to the Wyoming Oil & Gas Commission regulations.

One storage area and up to three staging areas would be required for the project. The staging areas (approximately 3 acres in size) would be cleared for cultural and natural resources. The storage area would be located on private land. Explosives would be temporarily stored and secured according to U.S. Bureau of Alcohol, Tobacco, and Firearms regulations.

Prior to commencement of operations, a meeting with the Rock Springs BLM specialists would be held and all participants informed of BLM policies. The proponent, Samson Resources, will be held accountable for crews' performance with respect to these policies.

### **Applicant Committed Measures**

Crossing of Salt Wells Creek would occur only at the existing oil field road bridge. No streambank disturbance would be allowed.

Explosive charges would not be detonated within 500 feet of springs, flowing wells, or stock water wells.

The proposed action includes activity within the 500-foot buffer next to Salt Wells Creek. Therefore the following additional precautions will be taken within the buffer area. Discharge from drilling operations will be stored within the work site area in a way that it will not enter into the stream channel during and after operations. Drill holes that encounter artesian flows will be sealed and not used as a shot-hole location.

Portable drills would not be placed on slopes in excess of 25%. No drill pads or other surface disturbances will occur on slopes in excess of 25%.

Geophysical activity is prohibited on crucial big game winter range from November 15 to April 30.

A survey of raptor nests would be conducted. No drilling would occur and no explosive charges would be detonated within 0.5 mile (1.0 mile for ferruginous hawks) of an active raptor nest during the mating/nesting season (February 1 through July 10) unless approved by BLM.

To protect greater sage-grouse, seasonal restrictions within a ¼-mile radius from the greater sage-grouse strutting ground would apply between February 1 and May 15. A controlled surface use (CSU) restriction would apply from February 1 through May 15 from 6:00 p.m. to 9:00 a.m. daily on the lek. Seasonal restrictions may be applied through June 30 within an additional 1¾-mile radius from leks to protect greater sage-grouse nesting habitat. Areas within that radius, not used for nesting, can be excepted, provided actual nesting areas are not affected.

The geophysical operator shall clean up all diesel or hydraulic fluid spills, including the contaminated soils. All spill-related material shall be hauled to a Wyoming Department of Environmental Quality (DEQ) approved disposal site.

All trash, flagging, lath, etc. will be removed and disposed of in an authorized location.

The geophysical operator shall conduct no vehicle operations during periods of saturated ground conditions when surface rutting would occur. Surface ruts deeper than 3 inches will be cause for the operations to cease.

As directed by the Authorized Officer, GeoTir will repair surface damage as necessary. This could include obliterating vehicle tracks on hillsides.

A Class I cultural resource inventory will be conducted by a qualified cultural resource consultant for the entire project area. Upon receipt of the Class I inventory, the BLM, in consultation with SHPO, will determine the area of potential effect and could prescribe additional inventory and/or avoidance strategies.

A Class III cultural resource inventory will be conducted for public lands where vehicle operations will occur. Such inventory will not be required for areas covered by existing inventory providing that such inventories meet current standards. Class III inventories will be designed to locate and prescribe avoidance routes or other mitigation for all eligible cultural resource sites encountered.

Any cultural or historic sites will be avoided by at least 100 feet. Avoidance will be accomplished by having a BLM-permitted archaeologist flag or otherwise mark places where vehicles may not be driven. In some instances, resource sensitivity may require monitoring at the time of activity by a qualified archaeologist.

Based on consultation with representatives of Native American Tribal governments and based on their recommendation, shotholes, geophones, or other project components could be moved if necessary.

Prior to the inception of fieldwork, crews will be briefed regarding cultural concerns, legal mandates, and any restrictions.

Any previously unidentified or unanticipated cultural resource (historic or prehistoric site, feature, structure, building, or object) discovered by the operator, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery would be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The operator would be responsible for the cost of evaluation and any decision as to proper mitigation measures would be made by the authorized officer after consulting with the proponent.

## **Alternatives**

### **No Action Alternative**

Under the No Action alternative, the shot-hole project would not be authorized on BLM administered lands. Operations could still occur on state and private lands. Existing land activities within the project area, i.e., livestock grazing and oil and gas extraction, would continue. Additional wells could be drilled without

additional information. Selection of this alternative would not prevent GeoTir or another geophysical operator from proposing other seismic operations.

**Alternatives Considered but Eliminated from Detailed Study**

**Man-Portable Drilling:** Under this alternative, only man-portable drilling equipment transported by crews on foot would be used to drill shot-holes for the subsequent deployment of explosive charges as the sole energy source. This alternative was eliminated because it has partly been incorporated into the proposed action. To conduct this proposal using utilizing only this procedure would result in a project that would not be economically feasible. Any impacts would be the same as the No Action alternative.

**Poulter Shot:** Is a method where 5-pound charges are placed above ground on common wooden lath. Six charges are detonated at once using detonator cord. Some of the energy from the explosion enters the ground creating a seismic wave. This method is very inefficient and returns poor data and would not meet the purpose and need of the Proposed Action.

**AFFECTED ENVIRONMENT**

The following critical elements, and other resource elements, of the human environment have been considered. Those items indicated with a “no” are not potentially affected or impacted by the proposed action or alternatives and will not be addressed further in this document.

**Critical Elements**

Critical Element	Yes	No	Critical Element	Yes	No	Critical Element	Yes	No
ACEC		X	Wastes, Hazardous, Solid		X	Native American Religious Concerns		X
Air Quality		X	T/E Species		X	Floodplains		X
Cultural/ Historic	X		Water Quality	X		Environmental Justice		X
Farmland, Prime/Unique		X	Wetlands/ Riparian Areas	X		Wild & Scenic Rivers		X
Wilderness		X	Invasive Species		X			

**Other Resource Elements**

Resource Element	Yes	No	Resource Element	Yes	No	Resource Element	Yes	No
Forested Area/ Product		X	Fluid or Solid Minerals		X	Special Status Species - Vegetation		X
Geology		X	Land Resources		X	Wildlife	X	
Livestock Grazing		X	Rangeland		X	Special Status Species - Animal		X
Paleontology		X	Vegetation		X	Socio/ Economics		X
Wild Horses		X	Soils		X	Recreation		X

Resource Element	Yes	No	Resource Element	Yes	No	Resource Element	Yes	No
Visual Resource Management		X	Off-road Vehicles		X			

### General Setting

The project area is on the flanks of the Salt Wells Anticline and is bisected by Salt Wells Creek forming Laney Canyon. The canyon bottom is filled by alluvium with fine sandy loam, clay loam, and loam soils which are highly erosive to concentrated runoff. The riparian zone of Salt Wells is incised about 20 to 25 feet in the alluvium and supports healthy riparian/wetland species including willow. Active beaver dams are common along the drainage.

The steep walls of Laney Canyon are formed by outcrops of Upper Cretaceous Ericson Formation cross-bedded sandstone and thin beds of carbonaceous shale, rising about 700 feet from the canyon floor to the surrounding rim. Areas of Rock Springs Formation interbedded shale, siltstone, and sandstone outcrop are also present along the canyon walls.

Backslopes of the rims of Laney Canyon are also dominated by Ericson Formation sandstones. Interbedded shale and sandstone of the Almond Formation are also present. Soils are generally fine sandy loams often less than 20 inches to bedrock with common outcropping of sandstone.

Vegetation on the alluvium is dominated by greasewood and other salt tolerant species. Sagebrush and associated grasses dominate the upland backslopes as well as non-saline areas on the alluvium. Mountain mahogany and snowberry are common along the canyon walls and in snow drift pockets along the rims.

### Affected Resources

#### Hydrology

The SW3D project area is located within the Salt Wells Creek watershed which is a tributary to Bitter Creek, a tributary to the Colorado River. The main channel of Salt Wells Creek bisects the SW3D project area along an approximately south to north line through Laney Canyon. Dry Canyon Creek, Gap Creek and several other unnamed tributaries to Salt Wells creek also drain the project area.

#### Riparian and Water Quality

Bitter Creek and all its tributaries, including Salt Wells Creek have experienced and are still adjusting to periods of significant channel downcutting and erosion resulting from a variety of past disturbances to the stream channel system. Some portions are showing positive changes, others are still actively eroding.

The portion of Salt Wells Creek that runs through the project area was surveyed in May 1998 using the BLM Proper Functioning Condition (PFC) method (TR1737-15) and was found to be in Proper Functioning Condition. This indicates that the channel had achieved or exceeded the minimum desired level of physical stability. Much of this stability was achieved through the health and vigor of the vegetative community.

Water quality samples have been obtained from Salt Wells Creek in the past but none have been taken recently enough to provide an accurate picture of water quality at this location. The effect that the watershed has on water quality can be inferred from the riparian condition. Using these criteria of healthy riparian areas indicating healthy water, the project area has a neutral to positive effect on water quality.

## **Socio-Economics**

The SW3D project is located in Sweetwater County, Wyoming. The local economy is highly dependent on energy gas exploration and development.

## **Vegetation**

Vegetation in the project area is primarily dominated by Wyoming big sagebrush/mixed grass prairie and desert shrub communities. Native plants in this area of southwest Wyoming are primarily drought-tolerant low shrub, grass, and flowering forb species.

Wyoming big sagebrush and desert shrubs are the primary cover types on the project area. Secondary cover types are desert shrub populations and mixed grasses. Other dominant plant species include: thickspike wheatgrass (*Agropyron dasystachyum*), western wheatgrass (*Agropyron smithii*), bottlebrush squirreltail (*Sitanion hystrix*), needle-and-thread (*Stipa comata*), Indian ricegrass (*Oryzopsis hymenoides*), Sandberg bluegrass (*Poa secunda*), bluebunch wheatgrass (*Agropyron spicatum*), and thread-leaf sedge (*Carex filifolia*). Forbs and especially woody crowned halfshrubs such as Hood's phlox (*Phlox hoodii*), Hooker's sandwort (*Arenaria hookeri*), cushion wild buckwheat (*Eriogonum ovalifolium*), green rabbitbrush (*Chrysothamnus viscidiflorus*), winterfat (*Eurotia lanata*), and broom snakeweed (*Gutierrezia sarothrae*) occur in some locations as understory dominants with the sagebrush.

## **Noxious Weeds**

Noxious weeds are very aggressive and invading infestations tend to exclude other native plant species thereby reducing the overall forage production of desirable shrubs, herbaceous grasses and forbs. The project area is vulnerable to infestations of noxious weeds, especially on newly disturbed surfaces.

## **Special Status Plants**

There is one federally listed species having potential habitat in the general area. This is Ute ladies'-tresses (*Spiranthes diluvialis*) which is listed as threatened. Ute ladies'-tresses has been found along the Platte River in eastern Wyoming and along the Green River near the Brown's Park area in Utah. Potential habitat occurs along riparian areas within the project area. This species does not grow and flower every year and even though searches have not found the species it may still occur in the area. Riparian areas where the potential habitat occurs are areas that will be avoided by the seismic operation. Since potential habitat occurs in the project area, BLM has made a may effect, not likely to adversely effect determination.

There are three BLM sensitive species found near the project area. These are Ownbey's thistle (*Cirsium ownbeyi*), Cedar Rim thistle (*Cirsium aridum*) and Nelson's milkvetch (*Astragalus nelsonianus*). They are found in areas that are often alkaline, on clay flats, shale ridges and on pebbly slopes in sparsely vegetated sagebrush and cushion plant communities at elevations of 5,000 to 7,000 feet. Population data are limited for nearly all occurrences of these species but populations are found within approximately 10 miles of the project area.

## **Wildlife**

### **Threatened, Endangered, Proposed, Candidate Species**

Three federally designated threatened, endangered, proposed, or candidate animal species and one plant species are considered potentially present in the project area. Colorado River fish species must also be considered in this analysis, as perennial streams within the project area contribute to the Green River drainage (USFWS).

Status of all potentially affected federally designated species with regard to the project is summarized below.

<u>Species</u>	<u>Status</u>	<u>Status in Project Area/Comments</u>
Bald eagle	Threatened	No suitable nesting, roosting habitat/No Effect
Black-footed ferret	Endangered	None known. Potential habitat not identified/No Effect
Yellow-billed cuckoo	Candidate	No suitable habitat/No Effect
Ute ladies'-tresses	Threatened	None known
Colorado River Fish	Endangered	No water depletion or effect/No Effect

#### Bald Eagle

Bald eagles are infrequently sighted near the project area during spring migration to nesting areas. No bald eagles have been recorded nesting or roosting in the project area as perennial water is limited. The BLM has made a "no effect" determination. This species will not be given further consideration in this analysis.

#### Black-Footed Ferret

No sightings of black-footed ferret have been reported in the project area and no potential ferret habitat is recorded. Due to these factors, the BLM has made a "no effect" determination. This species will not be given further consideration in this analysis.

#### Colorado River Fish Species

There are no anticipated water depletions associated with this project. The BLM has made a "no effect" determination for Colorado River fish, and these species will not be given further consideration in this analysis.

#### Sensitive Species

A number of animal species potentially present in the project area have been accorded "sensitive species" status (IM WY-2001-040). Sensitive species potentially present in the Salt Wells 3-D project area include: raptors, Wyoming pocket gopher, pygmy rabbit, swift fox, dwarf shrew, spotted bat, white-tailed prairie dog, greater sage grouse, sage thrasher, loggerhead shrike, Brewer's sparrow, sage sparrow, northern leopard frog, and Great Basin spadefoot.

BLM records show that there is 1 greater sage-grouse lek and/or nesting habitat within or adjacent to the project area.

BLM records indicate that four raptor nests are located within or near the project area boundary. Nesting species recorded are prairie falcon, golden eagle and red-tail hawk.

#### Big Game Species

##### Mule Deer

The project lies within the South Rock Springs herd unit. Mule deer utilize the project area year-round, and 100% of the project area is identified a crucial winter range for deer.

## Pronghorn Antelope

The project lies within the South Rock Springs herd unit. Antelope utilize the upland portion of the project area year-round, and approximately 15% of the project area is identified as crucial winter range for pronghorn antelope.

## Elk

The project lies within the South Rock Springs herd unit. Elk utilize the project area year round.

## Moose

Moose are infrequently sighted in the project area, primarily near riparian areas.

## Other

A variety of neo-tropical bird species, jackrabbit, cottontail rabbit, coyote, Richardson ground squirrel, thirteen-lined ground squirrel, badger, and mice also occur within the project area.

## **ENVIRONMENTAL CONSEQUENCES/IMPACTS**

### **Proposed Action**

#### **Cultural**

Pre-exploration cultural inventories could identify unknown resource sites. Damage could occur to sites not identified during the inventory process, or documented sites, if mitigation measures are not adhered to. Compliance with mandated mitigation should minimize or preclude cumulative impact to archaeological resources.

#### **Hydrology**

The activities that are planned under the Proposed Action have the potential to increase the turbidity, sediment levels, and salinity of the waters flowing through the project area. This is especially true for activities within the 500 foot buffer along the edge of the Salt Wells Creek riparian area. Mitigation measures would reduce but not eliminate the potential for disruption of the riparian area and the subsequent effects on water quality. Given the nature of the proposed activities, any disturbance to the riparian area and effects upon water quality would be limited in area and duration. Irrespective of this, all efforts should be taken to avoid creating such disturbances in the first place.

#### **Socio-Economics**

Seismic crews would likely be headquartered in Rock Springs and would be transported to the project area and back to town on a daily basis. Most of the workers have permanent residences elsewhere, consequently the project is not expected to place any demands on schools or similar facilities. It is unlikely that project activities would generate high levels of concern, opposition, or dissatisfaction among local residents. The project would provide some immediate monetary inflow to the local economy in terms of room and board, fuel, and other incidental purchases. Possible indirect economic benefits could result if geophysical data proves economically feasible that hydrocarbons occur in the area and any subsequent drilling is successful. Any future development proposed as a result of this action would be subject to the appropriate level of environmental analysis.

## Vegetation

Potential impacts to existing native shrub/grassland communities resulting from project implementation may include direct impacts such as disturbance, reduction, and/or removal of vegetation. Implementation of the project could result in the loss of natural vegetation in terms of cover and species composition in areas that are driven over multiple times or when soils are wet and ruts occur. Indirect effects would include increased potential for weed invasion, exposure of soils to accelerated erosion and loss of habitats.

The short-term or long-term loss in acreage would not impact the overall abundance and quality of these habitats. In general, the duration of effects on vegetation in the project area would depend on the time required for natural succession to return disturbed areas to pre-disturbance conditions of diversity. Reclamation success, in part, depends on the amount of surface area disturbed and quality of topsoil salvaged, precipitation, soil type, and moisture availability. Except for riparian/wetland and special status species sites, disturbance of the upland Wyoming big sagebrush and mixed grass vegetation types would be minor because of their abundance and wide area of distribution in this area of southwestern Wyoming and the limited disturbance from this type of project.

Surface disturbing activities could increase the potential for infestation and spread of noxious weeds and other invasive plant species. Invasive species usually thrive on newly disturbed surfaces such as road and pipeline ROWs and out-compete more desirable plant species. To further reduce potential impacts from invasive species, equipment should be washed prior entering the project area.

## Wildlife/Sensitive Species

The entire project area lies within crucial winter range for mule deer, and approximately 15% of the project area is utilized by pronghorn antelope as crucial winter range. Activities under the proposed action would be restricted between November 1 and April 30. Project activities outside the seasonal restriction such as geophone cable deployment and vehicle traffic, would cause animals to temporarily vacate the immediate area where operations are occurring. Such displacement would be brief and localized. Geophysical operations would occur outside of critical time frames for certain species such as the greater-sage grouse, and raptors; species which are documented as occurring in the area. With timing and avoidance limitations, no impacts to these species are expected.

The following list indicates sensitive species identified within the project boundaries and the seasonal/avoidance stipulations to be applied.

### Raptor Species

Prairie falcon: Disruptive activities restricted within ½ mile, February 1-July 10

Red-tail hawk: Disruptive activities restricted within ½ mile, February 1-July 10

Golden Eagle: Disruptive activities restricted within ½ mile, February 1-July 10

### Greater Sage-Grouse

Greater sage-grouse: No surface occupancy within ¼ mile of lek, disruptive activities restricted within ¼ mile of active leks from 6:00 pm to 9:00 am, daily. Seasonal restrictions apply within 2 miles of leks, March 15-June 30.

## CUMULATIVE IMPACT ANALYSIS

### Proposed Action

Individuals of species identified in the Affected Environment, if present, could be impacted by geophysical operations. The primary impact anticipated is the temporary displacement of animals in near activity in the project area. Application of timing limitations or avoidance measures for raptors and grouse would benefit other sensitive species.

With implementation of the proposed measures prescribed earlier in this document (see proposed action), the primary impact associated of the proposed action would be that of driving on approximately 3 % of the ground surface in the project area and potentially damaging and to a much lesser extent killing a percentage of the brush within the tire paths. This project would affect primarily vegetation. No cumulative impacts to other resources are foreseen.

Incremental effects to overall vegetation are considered negligible because:

- They are limited to species composition changes (not vegetation removal/dirt work);
- Species composition changes would occur on less than 3 % of the project area;
- Species composition shifts would involve only a proportional change among existing native plants (no introduced species); and
- Species composition changes would be short term, as new brushy plants would begin to reoccupy the vehicle paths within a few years.

BLM field inspection of past projects has indicated that 3D seismic projects do not leave major vegetative changes. The amount or percentage of sagebrush actually killed within the travel corridors, i.e., under tire tracks and pads, are considerably less. Cumulative impacts to vegetation are therefore not expected to differ much from those described under environmental consequences above and are expected to be minimal.

Conclusively, considering the relatively low level and short-term nature of the anticipated project impacts and the implementation of the protective measures proposed, the proposed 3D vibroseis project together with on-going activities would not adversely affect elements of the environment in the long term.

### Residual Impacts of Proposed Action

Compliance with mandated and applicant committed measures should result in no residual impacts except for crushed vegetation.

### No Action Alternative

#### Cultural

No pre-exploration inventory would be accomplished and no damage would occur to cultural sites. Future impact could occur as a result of continued wildcat drilling operations.

#### Hydrology, Riparian, and Water Quality

Under the No Action Alternative the immediate disruption to the watersheds and riparian areas would be avoided but the knowledge of the geologic conditions in the area would not be obtained. This could result in reduced efficiency in the location of mineral resources, which could result in greater amounts of surface disturbance and associated effects on water quality in the long run.

#### Socio-Economics

There would be an adverse effect to the socio-economic condition under the No Action alternative in the form of lost opportunity for short-term economic gain for those local businesses that provide services to

geophysical crews. This alternative would result in a loss of data that could lead to further energy development and production. Geophysical activity is considered a valuable method for collecting subsurface data and allows for efficient planning of subsequent activities.

#### Wildlife

There would be no affect to special status species under the No Action alternative. Any exploratory drilling would be subject to NEPA compliance and sensitive species would be analyzed at that time.

There would be no effect to wildlife under this alternative.

#### **DESCRIPTION OF PROPOSED MITIGATION MEASURES**

Avoidance of mountain mahogany and junipers to the extent possible.

The proposed action includes activity within the 500-foot buffer next to Salt Wells Creek. Therefore the following additional precautions will be taken within the buffer area. Discharge from drilling operations will be stored within the work site area in a way that it will not enter into the stream channel during and after operations. Drill holes that encounter artesian flows will be sealed and not used as a shot-hole location.

Any cultural or historic sites will be avoided by at least 100 feet.

#### **PREPARERS**

John MacDonald – Natural Resource Specialist  
Teri Deakins-Environmental Protection Specialist  
Terry Del Bene-Cultural  
Dennis Doncaster-Hydrology  
Chris Durham-Wildlife  
Jim Glennon-Vegetation  
Dwight Melancon-GeoTir

#### **REFERENCES**

U.S. Department of the Interior, 1997. Record of Decision for the Green River Resource Area Management Plan and environmental impact statement. U.S. Department of Interior, Bureau of Land Management, Rock Springs District, Rock Springs, Wyoming

U.S. Geological Survey, 1973. Geologic Map of the Potter Mountain Quadrangle, Sweetwater County, Wyoming-GQ-1082.

U.S. Fish and Wildlife Service, communication March 15, 2004

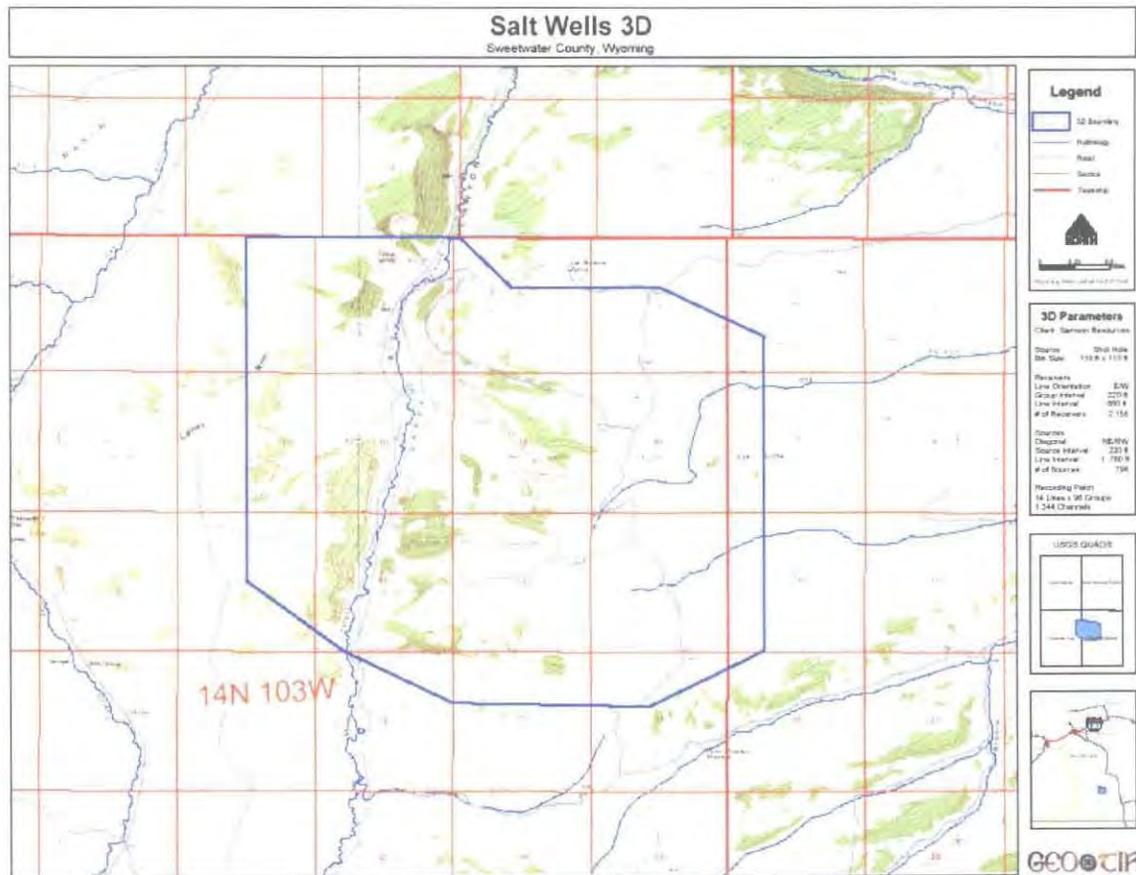
## SALT WELLS 3D GEOPHYSICAL PROJECT

### FINDING OF NO SIGNIFICANT IMPACT AND DECISION RECORD

GeoTir Corporation (GeoTir) filed a Notice of Intent on January 13, 2004 to conduct a 3D seismic survey on public lands within the administrative area of the Rock Springs Field Office (RSFO). The project area covers approximately 11 square miles or 5,160 acres, and is roughly 5.5 miles by 5.5 miles. Of the total acreage in the project area, 4,520 acres are BLM-administered public land, 480 acres are state-owned land, and 160 acres are private land. Lands affected by the proposed project in the Elk Butte and Laney Canyon area include:

T14N, R103W Sections: 1-4, 9-16, 22-24  
T14N, R102W Sections: 6, 7, 18, 19  
6<sup>th</sup> Principle Meridian, Sweetwater County

#### Project Map



#### Alternatives Considered in the Analysis

The attached analysis considered two alternatives, the Proposed Action and the No Action alternative. Both are described in the attached EA.

#### Alternatives Considered but Eliminated from Detailed Study

**Man-Portable Drilling:** Under this alternative, only man-portable drilling equipment transported by crews on foot would be used to drill shot-holes for the subsequent deployment of explosive charges as the sole energy source. This alternative was eliminated because it has partly been incorporated into the proposed

action. To conduct this proposal using utilizing only this procedure would result in a project that would not be economically feasible. Any impacts would be the same as the No Action alternative.

**Poulter Shot:** Is a method where 5-pound charges are placed above ground on common wooden lath. Six charges are detonated at once using detonator cord. Some of the energy from the explosion enters the ground creating a seismic wave. This method is very inefficient and returns poor data and would not meet the purpose and need of the Proposed Action.

### **Decision**

Based on the analysis contained in the attached EA, it is my decision to approve the Proposed Action and authorize geophysical exploration as described in the attached EA. GeoTir may proceed with the Salt Wells 3D vibroseis project once the Notice of Intent is approved and all necessary clearances are completed. Geophysical operations will be subject to the measures identified in this decision in addition to the standard conditions contained in the approved Notice of Intent.

### **Rationale for Decision**

My decision to approve this action is based upon the following:

- The proposed action is in conformance with the Resource Management Plan for the Rock Springs Field Office which allows geophysical operations including 3D vibroseis exploration.
- The proposed action would avoid unnecessary and undue impacts to resource values addressed in the attached EA.
- Public participation, consultation, and coordination have occurred. BLM issued a Scoping Notice on February 4, 2004, allowing a 30-day comment period. All issues brought forth during scoping have been considered.
- No listed, proposed for listing, or candidate species are affected by the proposed action. U.S. Fish and Wildlife Service has determined that mountain plover does not warrant listing under the Endangered Species Act and is considered a BLM sensitive species. All BLM-identified sensitive species have been given consideration and adequate protection.
- This decision is consistent with all federal, state, and county authorizing actions required to implement the Proposed Action. All pertinent statutory requirements applicable to this proposal were considered. Compliance with Section 106 of the Historic Preservation Act will be completed prior to seismic operations.

### **Finding of No Significant Impact**

Based on the analysis of potential environmental impacts contained in the attached EA, I have determined that impacts are not expected to be significant and therefore, an environmental impact statement is not required.

### **Appeal**

This decision is effective upon the date the decision or approval is signed by the authorized officer. The decision or approval may be appealed to the appropriate office of the Interior Board of Land Appeals in accordance with regulations contained in 43 CFR 3150.2. If an appeal is filed, a copy of the notice of appeal must be filed in this office (Rock Springs Field Office, 280 Highway 191 North, Rock Springs, Wyoming 82901) within 30 days of receipt of the decision. The appellant has the burden of showing the decision or approval appealed from is in error. If you wish to file a petition for stay pursuant to 43 CFR 3150.2(b), the petition for stay should accompany your notice of appeal and shall show sufficient justification based on the following standards:

1. The relative harm to the parties if the stay is granted or denied,
2. The likelihood of the appellant's success on the merits,
3. The likelihood of irreparable harm to the appellant or resources if the stay is not granted, and

4. Whether the public interest favors granting a stay.

Any adverse party to an appeal must be provided copies of all documentation pertaining to the appeal.  
The adverse parties for this action are:

GeoTir Corporation  
910-16 Street, Suite 1140  
Denver, Colorado 80202

Samson Resources  
700 17<sup>th</sup> Street, Suite 500  
Denver, Colorado 80202

Acting Asst. Susan J. Davis  
Field Manager

5/18/04  
Date