



CH2MHILL

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June 19, 2009

Ms. Sheila Mallory
Humboldt River Field Office
Bureau of Land Management
5100 E. Winnemucca Blvd.
Winnemucca, NV 89445

Subject: TGP Dixie Development Company New York Canyon Geothermal Ground
Magnetic Survey Casual Use Request and 2-meter Temperature Gradient Well Categorical
Exclusion Request

Dear Sheila,

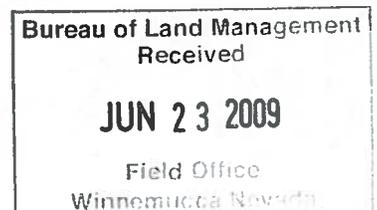
CH2M HILL, Inc. (CH2M HILL) is pleased to submit on behalf of TGP Dixie Development Company (TGP) electronic copies, with hard copies to follow, of the general description including maps and shape files of ground magnetic surveys and 2-meter temperature gradient mapping proposed in and around the New York Canyon (NYC) geothermal lease area. TGP is seeking approval to conduct the ground magnetic surveys by the BLM as casual use activities prior to the start of these activities tentatively scheduled for late June 2009. TGP is seeking approval to conduct the temperature gradient mapping by the BLM under categorical exclusions prior to the start of these activities tentatively scheduled for late June 2009. A signed Notice of Intent Form 3200-9 is included for the temperature gradient mapping.

Please feel free to contact me if you have any questions or need any additional information. I can be reached at 702-953-1208 or on cellular at 702-427-0349.

Sincerely,

CH2M HILL, Inc.

Amy Lahav
Deputy Project Manager
CH2M HILL



Attached: Ground Magnetic Survey Description
 2-meter Temperature Gradient Mapping Description
 NOI for Temperature Gradient Mapping
 Figure Shape Files
 Appendix A

Cc: Bernard Raemy, TGP
 Jerry Salamy, CH2M HILL
 Mike Baughman, Intertech Services Corporation

*2-meter Temperature Gradient Mapping
Description for*

New York Canyon Geothermal Exploration and Development

Prepared for
TGP Dixie Development Company, LLC

Submitted to
**Bureau of Land Management,
Humboldt Field Office**

June 19 2009

Prepared by:
CH2MHILL
2285 corporate Circle
Suite 200
Henderson, NV 89074

Introduction

TGP proposes to conduct temperature gradient mapping within the New York Canyon (NYC) lease by implanting thermocouples up to 2 meters into the earth's surface at 20 points identified along the fault line as shown in Figure 1. TGP is seeking approval to conduct temperature gradient mapping by the BLM under a categorical exclusion prior to the start of these activities scheduled for the end of June 2009. These activities are expected to be completed by the end of August 2009. The general location for these wells is T25N, R35E, Sections 1,2,3, 10, 11, 12, 14, 15, 35; T25N, R36E, Section 6; T26N, R35E, Section 36; T26N, R36E, Sections 31, and 32. (See Figure 1). TGP holds geothermal leases N-74854, N-7698, N-76299, N-76300, and N-76301 for this area.

Land Use Plan: Sonoma-Gerlach MFP (1982) and Programmatic Environmental Impact Statement for Geothermal Leasing in the Western United States, 2008.

Existing Environmental Document(s): none (See below)

CX Provision:

516 DM11.9 (B) (6) Approval of notices of intent to conduct geophysical exploration of oil, gas, geothermal pursuant to 43 CFR 3150 or 3250 when no temporary or new road construction is proposed.

516 DM11.9 (J) (3) Conducting preliminary hazardous materials assessments and site investigations, site characterization studies and environmental monitoring. Included are siting, construction, installation and/or operation of small monitoring devices such as wells, particulate dust counters and automatic air or water samples.

Proposed Action

TGP proposes to map temperature variations below the earth's surface by installing 2-meter temperature gradient probes placed on a 1/4 mile grid out to 3/4 mile distance from the base of the Stillwater Mountain Range as shown in Figure 1. The surveyors would implant 2.2 m long, 1/4 inch diameter schedule 80 seamless steel probes into the ground surface at depths of up to 2 meters. The probes will be driven using a handheld Milwaukee 3/4 inch demolition hammer or equivalent as shown below. Power for the handheld hammer is supplied with a 2.5 kW generator. The inside diameter of the probe allows for the insertion of a 1/4 inch temperature sensor. The sensor consists of a resistance temperature device (RTD) which is sealed in a stainless steel protection tube and connected to pair of signal wire for connection to a digital meter or data logger at the surface. Global positioning system (GPS) devices will be used to record the geographic coordinates of all temperature measurement locations. A car jack will be used to extract the rod from the ground surface if they cannot be pulled out by hand. The probes, RTDs, data loggers, demolition hammer, generator, and auxiliary equipment easily fit into the rear bed of a 2-3 person all-terrain vehicle (ATV), and the rear gate serves as a working platform for hammering the probes into the ground.



Hollow steel temperature probe being driven into ground with electric demolition hammer.

The time required to hammer one probe into the ground ranges from 10 seconds to several minutes depending on the hardness of the ground. Subsequent to inserting the rod into the ground, the surveyor will wait one hour for temperatures to stabilize before inserting the thermocouple. After an additional hour has passed, a temperature reading will be taken. Some thermocouples may be left in the ground for up to 24 hours. The surveyors will move between the temperature gradient wells just drilled and wells that have been allowed to stabilize in order to expedite survey activities which will be completed over a two week period between June 22, 2009 and July 31, 2009. The ATV makes it possible to place approximately 30 probes in an 8- hour day.

No new roads or ancillary structures will be constructed. Existing roads will be used to the fullest extent possible and overland travel will be done using ATVs where existing access roads do not exist and will not pass over the same area more than two times. ATVs will be equipped with balloon tires to prevent rutting and minimize impacts due to erosion and vegetation will be avoided to the extent feasible. Surface disturbance is expected to be minimal since no land clearing or new construction would be required and all probes will be removed when the exploration activity is completed. All holes created from thermocouple installation will naturally be filled back in and the ground surface returned to its original state.

Needed Coordination/Consultation

TGP will work with the BLM to minimize and avoid impact to sensitive or particularly important resources. It is envisioned that prior to entering the area for exploration activity, BLM would issue a

Draft Project Description
New York Canyon Geothermal Exploration and Development
TGP Dixie Development Company, LLC

“notice to proceed” and that notice would be contingent on completing the following measures as appropriate.

The 2-meter temperature gradient well exploration activity is anticipated to occur within the Migratory bird nesting season between March 15 and July 15. During the nesting season, a biologist will conduct a nest survey around each well site approximately 50 feet by 50 feet no sooner than two weeks prior to the exploration activity. In the event occupied nests are identified within an area proposed for testing, development of the well will be deferred until after birds have fledged or abandoned. All overland routes for ATV travel will be surveyed for bird nests, which if identified, will be avoided and alternative routes will be identified to avoid nesting birds. In the event that these activities are conducted outside of the bird nesting season, no biological survey is proposed.

Prior to commencement of exploration activities, cultural resource surveys will be conducted and site recordation completed. Results of these surveys will be used to avoid impacts to all cultural resource sites. TGP will work cooperatively with the BLM to ensure that cultural resource impacts are avoided. Prior to conducting the exploration activity, TGP will provide the BLM with IMACS forms.

To determine whether geophysical site evaluations are actions consistent with the previously mentioned Categorical Exclusions, an environmental review was undertaken to determine whether any of the extraordinary circumstances/exceptions (516 DM 2, Appendix 2) exist that would preclude consideration of the development of 2-meter temperature gradient wells as a categorically excluded activity. This review was provided to the BLM with the TGP May 26, 2009 submittal of the general Project Description. No impacts were determined in the evaluation.

For all geophysical exploration activities, TGP will adhere to BLM Standard Terms and Conditions for geophysical exploration as outlined in H-3150-1-Onshore Oil and Gas Geophysical Exploration Surface Management Requirements, which are included as Appendix A.

Required Bond Coverage

As required by 43 CFR 3251.14 TGP maintains a Geothermal Nationwide Bond, BLM Bond Number NV0577 in the amount of \$150,000.

Draft Project Description
New York Canyon Geothermal Exploration and Development
TGP Dixie Development Company, LLC

Figure 1

Draft Project Description
New York Canyon Geothermal Exploration and Development
TGP Dixie Development Company, LLC

Appendix A

From H3150-1 (Rel. 3-289, 06/07/94)

Illustration 16 (as revised by Rel. 3-330, 01/09/07)

**H-3150-1- ONSHORE OIL AND GAS GEOPHYSICAL
EXPLORATION SURFACE MANAGEMENT REQUIREMENTS
(PUBLIC)**

**Bureau of Land Management (BLM)
Standard Terms and Conditions**

1. The operator shall contact the Field/District Office at least 48 hours prior to the start of the project to schedule a pre-work conference. The crew supervisor and additional crew chiefs (if needed) will attend the pre-work conference to discuss the terms and conditions for this operation.
2. The operator's representative will attend a meeting with the BLM to discuss cultural artifacts and potential penalties for tampering with cultural artifacts. The meeting can be held as part of the pre-work conference.
3. The operator will obtain permission from right-of-way holders prior to drilling and setting charges within authorized limits of the rights-of-way.
4. Existing routes and trails will be used to the maximum extent possible. The heliportable drill or other BLM approved technique will be used on the areas with steep slopes and rough terrain. Attempts to traverse irregular, soft, or steep slopes and terrain by all vehicles and equipment shall be kept to a minimum to avoid excessive rutting, soil erosion, excessive crushing of vegetation, and excessive visual impacts. Vehicular travel along the flagged lines will be kept to a minimum and be in a zigzag pattern between source points to reduce straight line disturbances. This procedure does not apply to vehicles following trails or roads.
5. Vehicular travel shall be suspended when ground conditions are wet enough to cause rutting or other noticeable surface deformation and severe compaction. As a general rule, if vehicles or other project equipment create ruts in excess of four inches deep when traveling cross-country over wet soils, the soil shall be deemed too wet for vehicular use.
6. The staging area(s) will be situated with good, safe access to county roads or state highways. The fuel truck for the helicopter will also be utilized at the staging area(s).
7. The staging area(s) shall be kept clean and free of litter. Appropriate human waste facilities will be provided and properly maintained. Such waste facilities shall be removed from the site upon completion of the project.
8. Roads will not be constructed for geophysical projects authorized under a categorical exclusion.

9. Operators of vehicles and equipment shall be responsible for not damaging fences and keeping gates as found. As a last resort, should a fence be cut for access, that fence must be repaired to former or better condition, after equipment has passed through.
10. Shot holes will be backfilled and plugged, in accordance with state regulations, after they are loaded with the explosive charge. Any cuttings resulting from shot hole drilling and not used in backfilling the shot hole will be scattered about the immediate area to blend with natural terrain and reduce visual impacts.
11. Geophysical equipment may encounter congested areas with trees requiring one or more trees to be removed and or limbed. If such action is needed then the tree(s) and or limb(s) shall be less than eight (8) inches at diameter breast height (dbh) or at the base of the branch. Trees to be cut or limbed which are located adjacent to public roads, communities and or public facilities shall be immediately cut into smaller pieces so that it is not aesthetically displeasing and dispersed within the immediate vicinity.
12. Any and all tire tracks one hundred feet (100'), leading away from an established dirt or two track road situated on public lands, will be hand raked to blend into the surrounding soil surface.
13. If soil is disturbed to the extent that erosion is likely or visual impacts are readily apparent, the disturbed areas will be rehabilitated utilizing the following techniques:

Ruts and vehicle tracks will be filled with soil and/or obliterated by either hand raking or similar method. When completing this work, care will be taken to minimize disturbance to surrounding lands that have not been disturbed. All areas where rehabilitation work is accomplished will be reseeded with the seed mixtures specified below:

Seed Mix

(To be provided by the local BLM Field/District Office.)

The seeded area should be hand raked to assure the seed is covered with approximately ¼ to ½ inch of soil. This seeding should be accomplished during the late fall, in October or November, before moisture conditions become prohibitive.

The seed shall be certified, pure live seed, and seed tags must be available if requested by the authorized officer. Certified weed free seed is to be used to rehabilitate disturbed land.

14. Setbacks and Buffers: the operator will adhere to setbacks or "buffer zones" that are set forth in the following tables.

**Offset in Feet, from Certain Objects
(based on pounds of explosive charge)**

Object	< 1 lb	1 lb	2 lbs	3 lbs	5 lbs	6 to 10 lbs	11 to 15 lbs	16 to 20 lbs
Pipeline less than 6" diameter	50'	100'	150'	150'	200'	250'	300'	400'
Pipeline 6" to 12" diameter	75'	150'	200'	200'	300'	400'	500'	600'
Pipeline greater than 12" diameter	100'	200'	250'	250'	300'	500'	600'	800'
Telephone line	20'	20'	30'	40'	40'	50'	50'	50'
Railroad Track or main paved Highway	50'	100'	150'	150'	150'	220'	280'	350'
Electric Powerline (Shot holes not to exceed 200' depth)	75'	100'	200'	200'	200'	200'	250'	300'
Water wells, buildings, underground cisterns, and all other similar objects	225'	300'	400'	450'	700'	800'	1000'	1200'
Brick and/or concrete block buildings	275'	400'	500'	600'	800'	1000'	1200'	1500'
Producing oil and gas well	250'	450'	600'	700'	800'	900'	1000'	1000'
Irrigation wells	500'	800'	1000'	1200'	1500'	2000'	2500'	2500'

Minimum Safe Offset In Feet for Vibrator Truck Operations

Structures	Distance (ft)
Residences, Buildings, Concrete Base Structures	300
Water Wells	350
Concrete Water Pipeline	100
PVC/Plastic Water Pipeline	20
Oil or Gas Well	250
Oil or Gas High Pressure Pipelines	30
High Voltage Power Lines	0
Local Transmission Power Lines	0

15. No equipment, only foot traffic laying receiver lines, will be used in swampy/wetland areas.

16. If any unanticipated prehistoric or historic archaeological sites or paleontological sites are encountered during the geophysical work, the work shall stop and the appropriate BLM archaeologist at the Field/District Office will be contacted. If a site is found, it will be recorded. The BLM will assume responsibility for evaluation and determination of significance, related to the historical or archaeological site. All known cultural resources sites will be avoided. Collection of any cultural or paleontological artifacts, bones or fossils from Federal lands is specifically prohibited.
17. Visible migratory bird nests will be avoided and not disturbed.
18. All equipment will be power washed prior to entering Federal lands to help mitigate the spread of noxious plants.
19. In order to minimize watershed damage and disturbance to game animals utilizing important seasonal wildlife habitat, seismic activity will only be allowed during the period from May 15 to December 15. Exceptions to this limitation may be specifically approved by the authorized officer.
20. When fire conditions reach high, the helicopter, vehicles, and equipment will carry water, shovels, and other fire fighting equipment to extinguish any fires that are accidentally started by the seismic operations.
21. If oil, lubricants and other petroleum or man-made products are accidentally spilled onto the ground surface, the BLM will be contacted and provided specific information about the spill and/or leak. Spills or leaks will be cleaned from the soil and any contaminated material will be bioremediated or disposed of at an authorized landfill.
22. All flagging, lath, pin flags, and similar materials used in the seismic project will be removed from public land and disposed of at an authorized landfill.
23. All Applicant-Committed Environmental Protection Measures documented in the applicant's NOI will be complied with in addition to thes

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

**NOTICE OF INTENT TO CONDUCT GEOTHERMAL RESOURCE
EXPLORATION OPERATIONS**

FORM APPROVED
OMB No. 1004-0132
Expires: July 31, 2010

Applicant(s) TGP Dixie Development Company, LLC for New York Canyon	Address (include zip code) 9590 Prototype Court, Suite 200, Reno, Nevada 89521
Operator (name and telephone number) include area code TGP Dixie Development Company, LLC	Address (include zip code) 9590 Prototype Court, Suite 200, Reno, Nevada 89521
Contractor(s) Gradient Geophysics, Inc. Boart Longiear, Elko, NV headquartered SLC, UT	Address (include zip code) 9486 Back Stretch Lane, Missoula, MT 59808

hereby apply for authorization to conduct exploration operations pursuant to the provisions of 43 CFR 3250 now or hereafter in force across and upon the following-described lands (give description of lands by township, attach map or maps showing lands to be entered or affected).
T25N, R35E, Sections 1,2,3, 10; T25N, R36E, Section 8; T26N, 35E, Section 36; T26N, R36E, Section 31

Type of operations to be conducted (give brief description).
2-meter Temperature Gradient Wells. See attached Proposed Action Form.

Exploration operations will be conducted during the period (date) from _____ to _____

Attached \$ _____ Surety bond Rider to Nationwide bond Rider to Statewide bond Bond to be furnished

Upon completion of exploration operations, the undersigned agrees to notify the Bureau of Land Management (BLM) that authorized exploration operations have been completed in conformance with the general and special terms and stipulations of the notice.

The undersigned hereby agrees (1) that he will not enter upon the described land until he has been informed in writing whether there are special stipulations applicable to his Notice of Intent, as to either time or method of operation or otherwise, and if there are such stipulations, what those stipulations are. (2) that he will comply with those special stipulations, if any; and (3) that he will not enter upon the described lands until his entry has been approved by the BLM.

The undersigned agrees to be bound by the terms and conditions of this notice to conduct exploration operations when approved by the BLM.

The undersigned agrees that the filing of this Notice under the regulations (43 CFR Subpart 3250) does not vest or confer any preference right to a geothermal resources lease.

The undersigned agrees further that all exploration operations must be conducted pursuant to the following terms and conditions:

1. Exploration operations must be conducted in compliance with all Federal, State, and local laws, ordinances, or regulations which are applicable to the area of operations including, but not limited to, those pertaining to fire, sanitation, conservation, water pollution, fish, and game. All operations hereunder must be conducted in a prudent manner.
2. Due care must be exercised in protecting the described lands from damage. All necessary precautions must be taken to avoid any damage other than normal wear and tear to improvements on the land including, but not limited to, gates, bridges, roads, culverts, cattle guards, fences, dams, dikes, vegetative cover, improvements, stock watering, and other facilities.
3. All drill holes must be capped when not in use and appropriate procedures must be taken to protect against hazards in order to protect the lives, safety, or property of other persons or of wildlife and livestock.

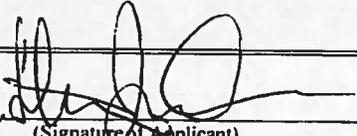
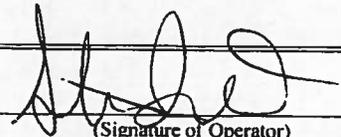
4. All vehicles must be operated at a reasonable rate of speed and, in the operation of vehicles, due care must be taken to safeguard livestock and wildlife in the vicinity of operations. Existing roads and trails must be used wherever possible. If new roads and trails are to be constructed, the BLM must be consulted prior to construction as to location and specifications. Reclamation and/or seeding of new roads and trails must be made as requested by the BLM.
5. Upon expiration, conclusion, or abandonment of operations conducted pursuant to this Notice, all equipment must be removed from the land, and the land must be restored as nearly as practicable to its original condition by such measures as the BLM may specify. All geophysical holes shall be safely plugged. The BLM must be furnished a Notice of Completion of Geothermal Resource Exploration Operations (Form 3200-10) immediately upon cessation of all such operations and must be further informed of the completion of reclamation work as soon as possible.
6. Location and depth of water sands encountered must be disclosed to the BLM.

7. Operator must contact the BLM prior to actual entry upon the land in order to be appraised of practices which must be followed or avoided in the conduct of exploration operations pursuant to the terms of this Notice and applicable regulations. Operator will conduct no operations on the land unless the attached bond is in good standing.
8. Due care must be exercised to avoid scarring or removal of ground vegetative cover.
9. All operations must be conducted in such a manner to avoid (a) blockage of any drainage systems; (b) changing the character, or causing the pollution or siltation of rivers, streams, lakes, ponds, waterholes, seeps and marshes; and (c) damaging fish and wildlife resources or habitat. Cuts or fills causing any of the above-mentioned problems will be repaired immediately in accordance with specification of the BLM.
10. Vegetation must not be disturbed within 300 feet of waters designated by the BLM, except at approved stream crossings.
11. Surface damage which induces soil movement and/or water pollution must be subject to corrective action as required by the BLM.
12. Trails and campsites must be kept clean. All garbage and foreign debris must be eliminated as required by the BLM.
13. Operator must protect all survey monuments, witness corners, reference monuments, and bearing trees against destruction, obliteration, or damage. He must, at his expense, reestablish damaged, destroyed, or obliterated monuments and corners, using a licensed surveyor, in accordance with Federal survey procedures. A record of the reestablishment must be submitted to the BLM.

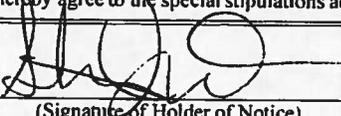
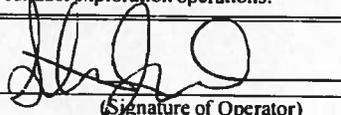
14. Operator must make every reasonable effort to prevent, control, or suppress any fires started by the operator, and to report, as soon as possible, to the BLM location and size of fires, and assistance needed to suppress such fires. Operator must inform the BLM as soon as possible of all fires, regardless of location, noted, or suppressed by independent action.
15. No work must be done within one-half mile of a developed recreation site without specific written authority from the BLM. Any travel within one-half mile of a recreation site must be over existing roads or trails.
16. Use of explosives within one-half mile of designated waters is prohibited unless approved, in writing, by the BLM.
17. If operations conducted under the provisions of this Notice causes any damage to the surface of the national resource lands, such as, but not limited to, soil erosion, pollution of water, injury or destruction of livestock or wildlife, or littering, operator must, within 48 hours, file with the BLM a map showing exact location of such damage and a written report containing operator's plans for correcting or minimizing damage, if possible.
18. Violation of, or failure to comply with any of these terms and conditions will result in immediate shutdown of field operations until deficiency is corrected. Failure to correct deficiency within the time period allowed by the BLM will result in forfeiture of bond.
19. The Bureau of Land Management reserves the right to close any area to operators in periods of fire danger or when irreparable damage to natural resources is imminent.
20. Contractor will be liable for assuring compliance with all terms and conditions of this Notice and all sections of his designated operator, agents, and employees.
21. Where continuation of the operation will result in irreparable damage to the land and other natural resources this Notice will be immediately canceled by the BLM.

22. Special Stipulations:

See attached Proposed Action Form.

	6/17/09		6/17/09
(Signature of Applicant)	(Date)	(Signature of Operator)	(Date)

We hereby agree to the special stipulations added and made a part of this Notice to conduct exploration operations.

	6/17/09		6/17/09
(Signature of Holder of Notice)	(Date)	(Signature of Operator)	(Date)

I hereby approve this Notice to conduct exploration operations.

(Signature of BLM)	(Title)
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Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

NOTICES

The Privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this Notice of intent to Conduct Geothermal Resource Exploration Operations.

AUTHORITY: 30 U.S.C. 1001-1025.

PRINCIPAL PURPOSE: The information is to be used to process your request for authorization to conduct exploration operations.

ROUTINE USES: (1) The adjudication of the request for authorization to conduct exploration operations. (2) Documentation for public information. (3) Transfer to appropriate Federal agencies when concurrence is required prior to granting a right in National Resource lands or resources. (4)(5) Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions.

EFFECT OF NOT PROVIDING INFORMATION: Disclosure of the information is voluntary. If all the information is not provided, your request for authorization may be denied.

The Paperwork Reduction Act of 1995 requires us to inform you that:

BLM collects this information in accordance with 43 CFR 3250.

This information will be used to identify and communicate with the parties involved.

Response to this request is required to obtain a benefit.

BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0074), Bureau Information Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.