

**U. S. NUCLEAR REGULATORY COMMISSION**

LICENSEE: MOLYCORP, INC.  
License No. SMB-1393  
Docket Nos. 040-08794 and 040-08778

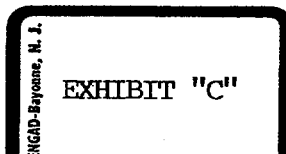
**REPLY OF DEFENDANT CANTON TOWNSHIP  
TO MOLYCORP, INC.'S RESPONSE TO  
AMENDMENT TO REQUEST FOR HEARING**

Petitioner/Requestor CANTON TOWNSHIP, by its Solicitor, JOHN T. OLSHOCK, and its Special Counsel, SAMUEL P. KAMIN, SAMUEL R. GREGO and the law firm of GOLDBERG, KAMIN & GARVIN, hereby files the following Reply to Molycorp, Inc.'s Response to Amendment to Request for Hearing, and in support thereof states as follows:

**Scope of Current Proceedings**

Licensee Molycorp, Inc. ("Molycorp") continues to insist that these proceedings deal solely with the narrow issue of the proposed transfer of radioactive material from Molycorp's York facility to its Canton Township facility and the "temporary" storage thereof. Molycorp's insistence in this regard ignores logic and reality.

As explained in Canton Township's Amendment to Request for Hearing ("Amendment"), Canton Township's initial Request for Hearing was filed under both docket numbers (040-08794 and 040-08778) that were listed in the Notice to which Canton Township filed in June 1999. Docket No. 040-08778 deals solely with Molycorp's Site Decommissioning Plan for its Canton Township facility, which proceeding was already joined with the docket number for the proceeding dealing with the proposed transfer and temporary storage of the York waste. Both of these proceedings were already joined and administered by the U. S. Nuclear Regulatory Commission ("NRC") prior to Canton Township's formal involvement in these proceedings. These facts are not disputed.



Molycorp's argument carried to its logical conclusion is that the proposals concerning the permanent disposition of **all** the radioactive waste material found at the Canton Township site has no impact on Molycorp's proposed "temporary" transfer and storage of its York material to Canton Township. What is to become of the York material, then, after the "temporary" period expires? Does it vanish? Has Molycorp made **any** provision for the subsequent removal of the York material after the "temporary" period expires, other than via its Site Decommissioning Plan?

To the contrary, Molycorp has specifically proposed that the York material be combined, in whole or in part, with the radioactive waste material already found at the Canton Township site. See Section 2.1.3, Decommissioning Plan, Washington, Pennsylvania facility, Part 1 Revision (June 30, 1999); Section 2.1.1 Decommissioning Plan, York facility, Revision 1 (June 30, 1999). Canton Township is merely responding at this time to the actions taken (or proposed to be taken) by Molycorp and Molycorp itself has implicated its entire Site Decommissioning Plan in its proposal to transfer the York material to Canton Township.

Finally, contemporaneously herewith, Canton Township intends to file an additional Request for Hearing based on the recent Notice of Consideration of Amendment Request (Docket No. 040-08778) published in the Federal Register on November 16, 1999 regarding Molycorp's Site Decommissioning Plan of its Canton Township site. Canton Township will request that its Request for Hearing in this new proceeding be consolidated with the current proceeding before the NRC (to the extent there are any differences in the proceedings).

### **Canton Township Meets the Judicial and NRC Standards for Standing**

To establish standing, Canton Township must establish (a) that it and/or its citizens has suffered or will suffer harm that constitutes injury in fact; (b) that the injury can fairly be traced to the challenged action/proposed licensing action; and (c) that the injury is likely to be redressed by a favorable decision in the proceeding. *In Matter of International Uranium Corp.*, 48 NRC 137, 141 (Atomic Safety and Licensing Board Panel 1998); *In Matter of Babcock and Wilcox Company*,

39 NRC 47, 50 (Atomic Safety and Licensing Board Panel 1994). Molycorp has not disputed that Canton Township meets elements (b) and (c) above (and could not reasonably do so). Therefore, the sole issue before the NRC at this time is whether Canton Township has or may establish harm that constitutes injury in fact.

In the section entitled "Specified Areas of Concern Germane to the Subject Matter" of the Amendment, Canton Township lists several factors which constitute actual or threatened harm to Canton Township and its citizens living in the vicinity of the Molycorp plant. These factors are all "fairly traced" to the proposed licensing action of either the temporary York storage or site decommissioning of the entire plant or both. An NRC decision in favor of Canton Township's position would likely provide redress for the claimed injuries.

The injuries Canton Township is claiming are not abstract, hypothetical injuries insufficient to establish standing to intervene. It has been held that close proximity to a subject site may itself confer standing. *In Matter of Virginia Electric and Power Company*, 9 NRC 54 (Atomic Safety and Licensing Appeal Board Panel 1979) (in license amendment proceeding, residents in close proximity to site were granted leave to intervene even though they had not yet proven the facts underlying their concerns). In *In Matter of Northern States Power Company*, 31 NRC 40 (Atomic Safety and Licensing Board Panel 1990), an individual who regularly commutes once or twice a week past the entrance to the subject site was found to have standing in the company's decommissioning process.

In cases where offsite implications are asserted, the NRC can only deny standing when it can be reasonably concluded that there is **no** potential for offsite consequences. *In Matter of Sequoyah Fuels Corporation and General Atomics*, 39 NRC 54, 67-69 (Atomic Safety and Licensing Board Panel 1994). Canton Township has already identified offsite implications in its Request for Hearing and the Amendment. See, e.g., sections entitled "Evidence of Dispersion and/or Migration of Radioactive Material" (page 8-9, Amendment) and "Proximity of Water Line and Chartiers Creek Watershed to Proposed Storage Sites" (page 10, Amendment).

Even in cases without obvious offsite implications, the decision maker must "avoid 'the familiar trap of confusing the standing determination with the assessment of petitioner's case on the merits.'" *Sequoyah Fuels*, 39 NRC at 68 (quoting *City of Los Angeles vs. National Highway Traffic Safety Administration*, 912 F.2d 478, 495 (D.C. Cir. 1990) (citations omitted)). The threshold showing of areas of concern of a petitioner in a Subpart L proceeding is low and a petitioner is not required to set forth all of its concerns until it has access to the NRC hearing file. See *International Uranium*, 48 NRC 137, 142. Canton Township has not yet been given access to such hearing file.

Molycorp has clearly confused the issue of Canton Township's standing in these proceedings with the underlying merits of the disputes. Canton Township does not dispute that Molycorp disagrees with the Township's (and its citizens') concerns about Molycorp's York disposal and permanent decommissioning plans. The operator of subject facilities rarely, if ever, share the surrounding residents' serious and valid concerns about the operations at issue. Canton Township will make its further factual presentation at the hearing which it is submitted the NRC should allow to take place in this proceeding and Molycorp in turn will be required to meet its burden of establishing the appropriateness of its proposed plans. Those issues, however, are not before the NRC at this time; rather, only Canton Township's standing is at issue. Canton Township has presented numerous factual concerns which relate to actual or threatened injury to it and its citizens, thereby constituting "injury in fact" sufficient to impart standing on Canton Township in this proceeding.

#### **Reply to Assertion of "Misstatements of Facts"**

In the last section of its Response to Amendment to Request for Hearing, Molycorp implies that Canton Township has grossly misstated certain facts relating to the procedural history and the substantive background of these proceedings. To the contrary, Canton Township reiterates the facts contained in its Request for Hearing and the Amendment and disputes Molycorp's mischaracterization of them. Nevertheless, the existence of these obvious factual disputes between Canton Township and Molycorp establishes *a fortiori* the need for a hearing in these proceedings.

A. Location of Waterline - Canton Township believes that a 16" municipal waterline which serves Canton Township and the City of Washington metropolitan area lies under the existing radioactive waste burial mound on the Molycorp property. See paragraph 21, page 10, Amendment. Molycorp, on the other hand, believes that the waterline runs **alongside** this mound. See paragraph 30, Molycorp's Response. Clearly, there is a factual dispute on this issue and one method to determine definitively the precise location of this waterline is to actually unearth the disputed line. Canton Township proposed such option at the November 9, 1999 meeting with Molycorp. Molycorp's response, as expressed at the November 9 meeting and in its Response, is to avoid such definitive resolution and instead, install a new waterline and cut off the water supply to the old line (not remove the line as Molycorp asserts in its Response). As attached to the initial Request for Hearing, Canton Township has independent evidence relating to this issue and Molycorp's assertions of fact have no weight at this stage of the proceeding.

B. Concerns of the Pennsylvania Department of Environmental Protection about the Site(s) - Molycorp fails to address the concerns of the Pennsylvania Department of Environmental Protection ("Pa. DEP") about the proposed storage sites on the Molycorp Canton Township property. Those concerns of the Pa. DEP were expressed, *inter alia*, in a document entitled "Evaluation of 10 CFR 20.1403 and NRC Draft Regulatory Guide DG-4006 'Demonstrating Compliance with the Radiological Criteria for License Termination' in Regards to Molycorp's Proposal to Dispose of Waste On-Site," a copy of which document is attached hereto and made a part hereof as Exhibit No. 1 ("DEP Report"). The DEP Report was submitted by David J. Allard, Director of the Bureau of Radiation Protection of the Pa. DEP, to David E. Hess, Executive Deputy Secretary for Policy and Communications, by letter dated April 22, 1999, a copy of which letter is attached hereto as Exhibit No. 2.

The concerns of the Pa. DEP include:

(1) Potential storage sites may be located within a 100-year flood plain - potential violation of the Pennsylvania Flood Plain Management Act, 32 P.S. §679.302 (see DEP Report).

(2) Several carbonate beds in the form of limestone and fossiliferous layers may lie beneath the surface of the proposed storage sites - see DEP Report and letter from the Pennsylvania Department of Conservation and Natural Resources to David Allard dated April 16, 1999, a copy of which is attached hereto as Exhibit No. 3.

(3) Potential storage sites may be located over active or inactive oil and gas wells or gas storage areas - see DEP Report and internal Pa. DEP memorandum dated April 16, 1999 from Thomas Flaherty to David Allard, a copy of which is attached hereto as Exhibit No. 4. Exhibit No. 4 states in pertinent part that "the potential for downhole communication with surface fluids or contaminants exists. Having been drilled to depths of approximately 3,000 feet, the wells have penetrated all the freshwater aquifer horizons. Potential exists for contamination of freshwater aquifers through these oil wells as well as for contamination of the petroleum reservoir which is apparently still in production in the area."

(4) Potential storage sites may be located over active or inactive mines - see DEP Report - although there is no mining directly under the sites, the Pa. DEP is concerned about Molycorp's ability to prevent future mining under the site(s) which could result in subsidence.

There was also testimony and/or discussion at an April 15, 1999 public hearing on the Molycorp matters held in Canton Township that testing by the Pa. DEP revealed radioactive contaminants in nearby Chartiers Creek and the creek bed of Chartiers Creek.

C. Institutional Controls under Proposed Decommissioning Plan - In the current proceedings of the Site Specific Advisory Board (SSAB) that has been convened to address certain issues of the Molycorp Decommissioning Plan, it has been discussed that Canton Township may likely be required to monitor the Molycorp property after (or pursuant to) the effectuation of the Decommissioning Plan. This likely prospective involvement by Canton Township further supports the validity of the scope of these proceedings to include the Decommissioning Plan and Canton Township's standing on such issue.

D. Lack of Information and Documents - Although parties in informal Subpart L proceedings do not have the right to formal discovery, Canton Township has an unqualified right to review all documents (not otherwise confidential) that may have been submitted by Molycorp or other entities relating to these proceedings. When Canton Township initially requested pertinent documents from the NRC, it was directed to obtain as much of the information as possible from Molycorp itself and such document retrieval process continues to this day.

Contrary to Molycorp's Response, the only hard copy of relevant documents provided to Canton Township by Molycorp prior to November 12, 1999 were the 3-volume Site Characterization Report for License Termination of the Canton Township Facility (dated January 1995) and a Site Assessment Report of Vacant Property Located on Caldwell Avenue (dated October 1997). No other documents were provided to Canton Township until November 12, 1999, after the filing of Canton Township's Amendment to Request for Hearing.

Counsel for Canton Township investigated the extent of the relevant documents available at the NRC document repository in Aliquippa, Pennsylvania prior to November 1999 and was advised that no hard copy documents relating to Molycorp were available in Aliquippa and that no documents filed or issued after August 1, 1999 would be available in Aliquippa in any form. Considering the nature of the documents in question, *e.g.*, large maps of varying analytical colors, which colors are substantively relevant to the pending issues, microfiche copies of several voluminous reports filled with scientific data were deemed unsuitable for true and proper analysis. Therefore, prior to the filing of its Amendment, Canton Township had only received a few of the numerous documents relevant to these proceedings.

To this day, Molycorp has not chosen (or has not revealed to Canton Township) the precise locations of the (i) temporary storage site for the York material; and (ii) the permanent storage site proposed under its Site Decommissioning Plan. Until such locations are finally determined and revealed, neither Canton Township nor any other interested entity can make final determinations of the actual impact such proposals will have on it. In the interests of justice,

Canton Township may not be denied standing until such determinations by Molycorp are made and revealed.

Conclusion

Under these circumstances and for the foregoing reasons, Canton Township submits that it has established its need for and a right to a hearing under 10 CFR Section 2.1205(h).

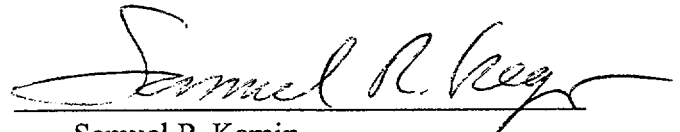
WHEREFORE, Petitioner/Requestor Canton Township, Pennsylvania hereby respectfully requests a hearing before the U.S. Nuclear Regulatory Commission on the pending Amendment Request of Licensee Molycorp, Inc.

Respectfully submitted,



John T. Olshock  
JOHN T. OLSHOCK & ASSOCIATES  
96 N. Main Street  
Washington, PA 15301-4515  
(724) 225-8460  
Solicitor for Canton Township

Date: December 9, 1999



Samuel P. Kamin  
Samuel R. Grego  
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Special Counsel for Canton Township



Evaluation of 10 CFR 20.1403 and NRC Draft Regulatory Guide  
DG-4006 "Demonstrating Compliance with the Radiological Criteria for  
License Termination" in Regards to Molycorp's Proposal to Dispose of  
Waste On-Site

Background

The NRC is currently reviewing a proposal submitted by Molycorp to move 3000 to 5000 cubic yards of mildly contaminated material from its York site to its Washington, PA site for temporary storage. Another approximately 80,000 cubic yards of more heavily contaminated material already resides at the Washington, PA site. Molycorp has previously submitted a proposal to permanently dispose of this material at the Washington, PA site. The NRC due to insufficient information rejected this proposal. Molycorp plans to resubmit the proposal. Molycorp will be seeking to dispose of the material and terminate their license under the requirements of 10 CFR 20.1403 and DG-4006.

Analysis

Section 4 of DG-4006 cites 10 CFR 20.1403 and lists 5 conditions for license termination under restricted conditions (e.g. on site disposal of waste) which must be met.

1. The licensee can demonstrate that further reductions in residual radioactivity necessary to release the site for unrestricted use (1) would result in net public or environmental harm or (2) were not made because the residual levels are ALARA.
2. The licensee has made provisions for legally enforceable institutional controls that would **limit dose to the average member of the critical group to 25 mrem.**
3. The licensee has **provided sufficient financial assurance to enable an independent third party to assume and carry out responsibilities for any control and maintenance of the site.**
4. The licensee has submitted a decommissioning plan that indicates the licensee's intent to release the site under restricted conditions and **tells how advice from individuals and institutions in the community who may be affected has been sought and incorporated, as appropriate, following an analysis of that advice.**
5. The residual radioactive levels have been reduced so that **if the controls fail the annual dose to the average member of the critical group would not exceed either 100 mrem, or under certain conditions, 500 mrem. If the 500 mrem/yr value is used the licensee must (1) demonstrate that achieving the 100mrem/yr is prohibitively expensive, not technically achievable or result in net harm, (2) make provisions for durable institutional controls, and (3) provide sufficient financial assurance to allow an independent third party carry out rechecks of the controls at least every 5 years.**

In order for the licensee to show that the **dose to the average member of the critical group is less than 25 mrem/yr** a dose assessment requires an exposure pathway analysis be performed that considers geological features of the site such as location within a

floodplain, presence of limestone, abandoned wells, and active or inactive mines. The GIS data that was cited by DEP in the preliminary evaluation of the site for use as a commercial disposal facility has to a large degree been validated:

- **Potentially suitable sites may not be located in areas where there is limestone or other predominately carbonate lithologic units (236.127(a))**

Preliminary investigation by the Bureau of Topographic and Geologic Survey of the DCNR indicates that several carbonate beds lie below the surface at the Molycorp Washington Site, in the form of limestone (10-30 feet below surface) and fossiliferous layers (54-254, 366-368, 650-690, and 792-892 feet below surface).

- **Potentially suitable sites may not be located within the limits of the 100-year floodplain of a waterway as defined in the Flood Plain Management Act (236.126(a)(1)).**

The Canton Township flood map, published by the Federal Emergency Management Agency (FEMA), shows that good portions of the Molycorp site is located in the 100-year flood plain.

- **Potentially suitable sites may not be located in areas over active or inactive oil and gas wells or gas storage areas (236.128(6)).**

Information gathered from the Bureau of Topographic & Geologic Survey shows that the Molycorp site is located inside the eastern edge of the Washington-Taylorstown Oil Field. An old farmline map shows that at least 9 oil wells are known to exist on this property. In addition, there are many oil wells in close proximity to the property in all directions. The status of the wells is not presently known. However, since the wells are nearly a century old, it is a certainty that the wells were not cased and cemented as required for new wells by modern standards and regulations. Therefore, the potential for downhole communication with surface fluids or contaminants exists

- **Potentially suitable sites may not be located in areas over active or inactive mines that are identified and substantiated by public records (236.128(8)).**

The available mine maps for this area shows that the closest underground mining is at least 700 feet to the northwest of the Molycorp site. This mining was conducted in the Pittsburgh Coal Seam prior to 1935. The vertical distance between the Pittsburgh Coal Seam and the surface varies between 330 and 470 feet. There is no mining directly under the site. However, the question is whether Molycorp would be able to prevent future mining at the site which could potentially result in subsidence.

It is not clear that the existing financial assurance is sufficient to allow an independent party to assume and carry out responsibilities for any control and maintenance of institutional controls required for the site. Institutional controls would be necessary for thousands of years due to the extremely long half-life of the disposed material. The current financial assurance for both the York and Washington sites totals approximately \$6 million.

To date, the licensee has not solicited advice from individuals and institutions in the community who may be affected even though they have stated they intend to resubmit a plan for decommissioning that involves on-site disposal. DG-4006 requires the licensee to seek advice from individuals and institutions in the community who may be affected by the decommissioning plan during development of the decommissioning plan.

An analysis performed for the licensee for the decommissioning plan rejected by the NRC indicates under a worst case scenario, **dose to the average member of the critical group will exceed 100 mrem/yr.** This could require MolyCorp to (1) demonstrate that achieving the 100mrem/yr is prohibitively expensive, not technically achievable or result in net harm, (2) make provisions for durable institutional controls, and (3) provide sufficient financial assurance to allow an independent third party carry out rechecks of the controls at least every 5 years.

COMMONWEALTH OF PENNSYLVANIA  
Department of Environmental Protection  
Bureau of Radiation Protection

April 22, 1999  
717-787-2480  
Fax: 717-783-8965

**SUBJECT:** Molycorp

**TO:** David E. Hess  
Executive Deputy Secretary for  
Policy and Communications

**FROM:** David J. Allard *DJA*  
Director  
Bureau of Radiation Protection

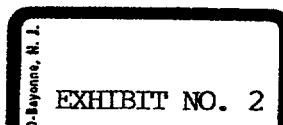
Chuck Duritsa  
Director  
Southwest Regional Office

Per our meeting and teleconference last week, the Bureau of Radiation Protection staff met with our counsel to review the Molycorp decommissioning project and regulatory drivers. As you correctly pointed out, the state's commercial Low-Level Radioactive Waste (LLRW) siting criteria is specific to commercial sites. However, the specific criteria we referenced in last week's public meeting (e.g., flood plain, oil wells, geology, etc.) would need to be used in any risk assessment/radiation dose pathway analysis for permanent onsite LLRW disposal.

It is the BRP's understanding that Title 10 CFR Chapter 20, Section 1403, "Criteria for License Termination" would apply to Molycorp if they proposed permanent disposal of LLRW onsite. The Nuclear Regulatory Commission (NRC) has drafted applicable guidance (i.e., Regulation Guide DG-4006) for licensees. Attached is a summary of the BRP analysis against the NRC's 10CFR20.1403 criteria, and of the information supplied by other Southwest Regional Office Department staff.

This Molycorp matter has implications for other NRC Site Decommissioning Management Plan (SDMP) sites in the Commonwealth. While acknowledging there has been significant regional radiation staff involvement, the BRP will begin to critically evaluate the status of each of these sites. It is the BRP's opinion that we do not need to develop any new guidance, but we do need to have Central Office oversight on all the sites to ensure uniform application of NRC criteria as we move toward Agreement State status.

Attachment(s)



David E. Hess

- 2 -

April 22, 1999

cc: Chamberlain, ARRP, 16<sup>th</sup> Floor, RCSOB  
Mather, Counsel, 9<sup>th</sup> Floor, RCSOB  
Barton, Counsel, 9<sup>th</sup> Floor, RCSOB  
Janati, BRP, 13<sup>th</sup> Floor, RCSOB  
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Duritsa, SWRO  
Yusko, SWRO, RPP  
Woods, SWRO, RPP  
File, BRP

DJA:cwr



Bureau of Topographic and Geologic Survey  
Subsurface Geology Section  
400 Waterfront Drive  
Pittsburgh, PA 15222-4745

April 16, 1999

To: Mr. David Allard  
Director, Bureau of Radiation Protection, DEP

Cc: Mr. David E. Hess  
Executive Deputy Secretary, DEP.

Ms. Denise K. Chamberlain  
Deputy Secretary for Air, Recycling & Radiation Protection, DEP

Mr. Todd Wallace  
Assistant to the Deputy for Air, Recycling & Radiation Protection, DEP

Mr. Chuck Duritsa  
Regional Director, Southwest Regional Office, DEP

From: Kathy J. Flaherty *KJF*  
Staff Geologist

Re: Molycorp Site, southwest of Washington, PA

After a brief investigation, I have the following comments regarding the presence of carbonate rocks (limestone, fossiliferous materials) in the subsurface of the Molycorp Site:

Surface:

The Washington Formation (probably only up to a few tens of feet thick at this location) occurs at the surface in the areas of higher elevation along the western edge of the site. This formation consists of "cyclic sequences of sandstone, shale, limestone, and coal, and contains the Washington coal at base." The Waynesburg Formation occurs on the surface in areas of lower elevation on the eastern boundary of the site, and underlies the Washington Formation. This formation is similarly described as "cyclic sequences of sandstone, shale, limestone and coal; contains Waynesburg coal at base."

Subsurface:

Underlying the Waynesburg Formation, which may be up to 140 feet in thickness, is the Monongahela Formation. It, also, has been described generally as "cyclic sequences of shale, limestone, sandstone and coal; contains Pittsburgh coal bed at base." The Monongahela varies from 270 to 350 feet in thickness.

The Conemaugh Group underlies the Waynesburg Formation. The upper portion, the Casselman Formation, varies from 200 to 400 feet in thickness, and is described as a "cyclic sequence of sandstone, shale, red beds and thin limestone and coal." The lower portion of the

Conemaugh Group is the Glenshaw Formation, described as "cyclic sequences of sandstone, shale, red beds and thin limestone and coal; several fossiliferous limestones; Ames limestone at top." The Glenshaw varies in thickness from 300 to 350 feet. The Freeport coal forms the base of the Conemaugh Group.

More specific information regarding the subsurface rocks in this area is available in the form of oil and gas driller records. Particularly, the following record is taken from the Gantz #1 well drilled in 1885. It is the nearest well for which we have information from the surface through the total depth of the hole. This well is located approximately 1 mile east of the Molycorp site. (See map attached.)

<u>Lithology</u>	<u>Feet below surface</u>
Sandy loam	1-10
Limestone, broken	10-30
Coal and slate ( <i>shale</i> ), crumbling	30-34 [base of Waynesburg Formation]
Limestone	34-54 [Benwood Limestone]
Slate and shells ( <i>fossiliferous shale</i> )	54-254
Sandstone	254-274
Slate ( <i>shale</i> )	274-304
Sandstone	304-329
Slate and shells ( <i>fossiliferous shale</i> )	329-333
Sandstone	333-338
Slate ( <i>shale</i> )	338-339
Pittsburgh Coal	339-344 [base of Monongahela Formation]
Sandstone	344-354
Slate ( <i>shale</i> )	354-366
Shells, hard ( <i>fossiliferous</i> )	366-368
Slate ( <i>shale</i> )	368-378
Sandstone, hard	378-389
Slate ( <i>shale</i> )	389-419
Sandstone, white, soft	419-429
Slate ( <i>shale</i> )	429-480
Sandstone, very hard	480-560
Slate ( <i>shale</i> )	560-570 [base of Casselman Formation]
Limestone	570-575 [Ames Ls; top of Glenshaw Fm]
Slate ( <i>shale</i> )	575-590
Red rock, inclined to cave	590-650
Slate and shells ( <i>fossiliferous shale</i> )	650-690
Red rock, caving badly	690-715
Slate ( <i>shale</i> )	715-747
Red rock	747-772
Sandstone	772-792
Slate and shells ( <i>fossiliferous shale</i> )	792-892
Sandstone, hard	892-992
Coal (Upper Freeport) and slate ( <i>shale</i> )	992-1004 [base of Conemaugh Group]

From the lithologic descriptions and this driller information, it is evident that several carbonate beds lie below the surface at the Molycorp site, in the form of limestone and fossiliferous layers. The Benwood and Ames limestones are described in *Limestones in Pennsylvania*, and the following is excerpted from that volume:

## LIMESTONES OF THE CONEMAUGH GROUP

*Ames limestone.* The lowest limestone outcropping in Washington County is the Ames which has also been known as the "Green Fossiliferous" and the "Crinoidal" limestone. It is a greenish-gray, impure, gnarly limestone containing abundant fossils, mainly crinoid stems and brachiopods, indicating its marine origin. It weathers to a dull gray. It is rarely more than 2 feet thick, but in a few places it occurs in two benches with a total thickness of 8 feet. It has a very limited exposure in Washington County, the outcrops being mainly confined to the northwest portion of the county, where it appears in the valleys of Aunt Clara Fork of Kings Creek, Kings Creek, and Harmon Creek, and is probably exposed along Monongahela River in the vicinity of Charleroi. It is of no economic importance.

## LIMESTONES OF THE MONONGAHELA GROUP

*Redstone and Fishpot (Sewickley) limestones.* In several places the interval between the Pittsburgh and Redstone coals consists of limestones interbedded with shales. This is particularly true in the vicinity of Bulger. These limestones have been grouped under the name of the Redstone limestone. The stone is a high silica, high magnesian, argillaceous limestone of no value except for agricultural lime and of little value for that purpose. It has a dense non-crystalline appearance not unlike flint fire clay. On weathering it breaks into small angular fragments showing conchoidal fracture.

The Fishpot or Sewickley limestone is a discontinuous limestone lens that is locally developed beneath the Sewickley coal. It is of little importance in Washington County.

*Benwood-(Great) and Uniontown limestones.* "Above, the Sewickley coal is a series of strata, aggregating in places 160 feet, which was formerly called the 'Great limestone'; later in accordance with the system of using geographic terms to designate geologic divisions, it was named the Benwood limestone, from the town of Benwood, W. Va., a short distance below Wheeling. The name Benwood was later restricted to the lower limestones of this interval and the name Uniontown already in the literature, was retained for the upper limestone. It is in the restricted sense that Benwood is here used. Between the Benwood and Uniontown limestone members is a shale interval of 15 to 20 feet.

"In the Burgettstown and Carnegie quadrangles the Benwood member consists of several beds of limestone separated by thick layers of shale. To two of these limestone beds, which are valuable oil horizon markers Griswold has given geographic names. The lower bed, of cream-white limestone, which lies 35 feet above the Sewickley coal, he has called Dinsmore, from exposures at Dinsmore, Washington County, Pa. The upper brown limestone bed he has called Bulger, from typical exposures at Bulger, Washington County. The Dinsmore limestone bed has a thickness of 4 feet and the Bulger limestone bed a thickness of 1 to 2 feet. These two limestone beds are separated by about 20 feet of shale, olive green at the top and reddish or yellowish below.

"Above the Benwood, separated therefrom by 15 to 20 feet of coarse calcareous shale, lies the Uniontown limestone member, of which four separate beds can generally be identified, though none of them are well developed in these quadrangles. The first consists of about a foot of solid limestone which shows a yellow surface when weathered and is blue when freshly broken; the weathered surface always shows small protuberances due to the presence of particles that are more resistant than the surrounding matrix, which give it the appearance of being covered with small pimples and make it easily recognizable. Ten feet above this limestone is another, about a



foot thick; it is composed of two highly different materials, which on weathering produce a characteristic spotted surface which serves to identify the rock wherever found. From 16 to 18 feet above the last-mentioned bed is a blue limestone, which on weathering has a white residue of clay upon its surface but is nevertheless easily distinguishable from other white limestone because the blue generally shows through the surface color. A foot or so above this bed is the top stratum of the Uniontown limestone member. On weathered outcrops, this is a soft yellow limestone, but on fresh fracture it shows brownish red. It disintegrates readily, and is seldom found in a solid ledge, its outcrop usually being marked by the presence of brown limestone nodules."

These limestones are exposed in numerous places north of Washington. The top layers form the bed of Georges Run from Gretna to its mouth. They are exposed along Brush Run, and Buffalo Creek, in Hopewell and Blaine townships and at the mouth of Buck Creek, south of Acheson. At the Arden mines, about 3 miles north of Washington, a shaft passed through 51 feet of limestone. In Folio No. 180 of the U. S. Geological Survey the following section of the Uniontown limestone is given (10, p. 5).

*Section of Uniontown limestone member on road west from mouth of  
Georges Run in Canton Township, Washington County*

	Pt.	In.
Limestone, dark blue, very hard, weathers yellowish white.....	1	4
Shale, yellow .....	2	0
Limestone, yellow and hard, very impure.....	2	6
Limestone, steel gray, weathers yellowish to white.....	0	6
Shale, yellow .....	8	0
Limestone, yellow.....	0	3
Shale, yellowish.....	8	6
Limestone, buff, very hard, weathers black .....	2	6
Sandstone, thin bedded.....	3	0
Limestone, in several beds, steel gray; top bed pimply; bottom bed weathers in grooves and fantastic forms to yellowish-white color .....	3	0
	31	7

The Benwood is exposed in ravines northeast of Kammerer, in eastern Nottingham Township, in Union Township and in many other places.

These limestones are generally high in silica, magnesium carbonate and argillaceous matter so that they are poorly adapted for flux, Portland cement, high-grade lime, or for road metal. They have, however, been used locally for agricultural lime, for flux, in Fayette County for natural cement, and in various places stone of sufficient hardness for road metal has been obtained. For none of these uses, however, are they particularly well fitted and the bulk of the stone is of practically no economic value.

*Analyses of Benwood limestone from Washington County*

	1	2	3	4
CaCO <sub>3</sub>	68.837	48.823	47.080	47.750
MgCO <sub>3</sub>	14.649	20.621	28.529	30.943
FeCO <sub>3</sub>	3.306	3.625	7.511	5.6
Al <sub>2</sub> O <sub>3</sub>		3.523		
S	.097	.203	.069	.126
P	.049	.051	.127	.015
Insoluble residue	13.300	22.520	15.750	14.920

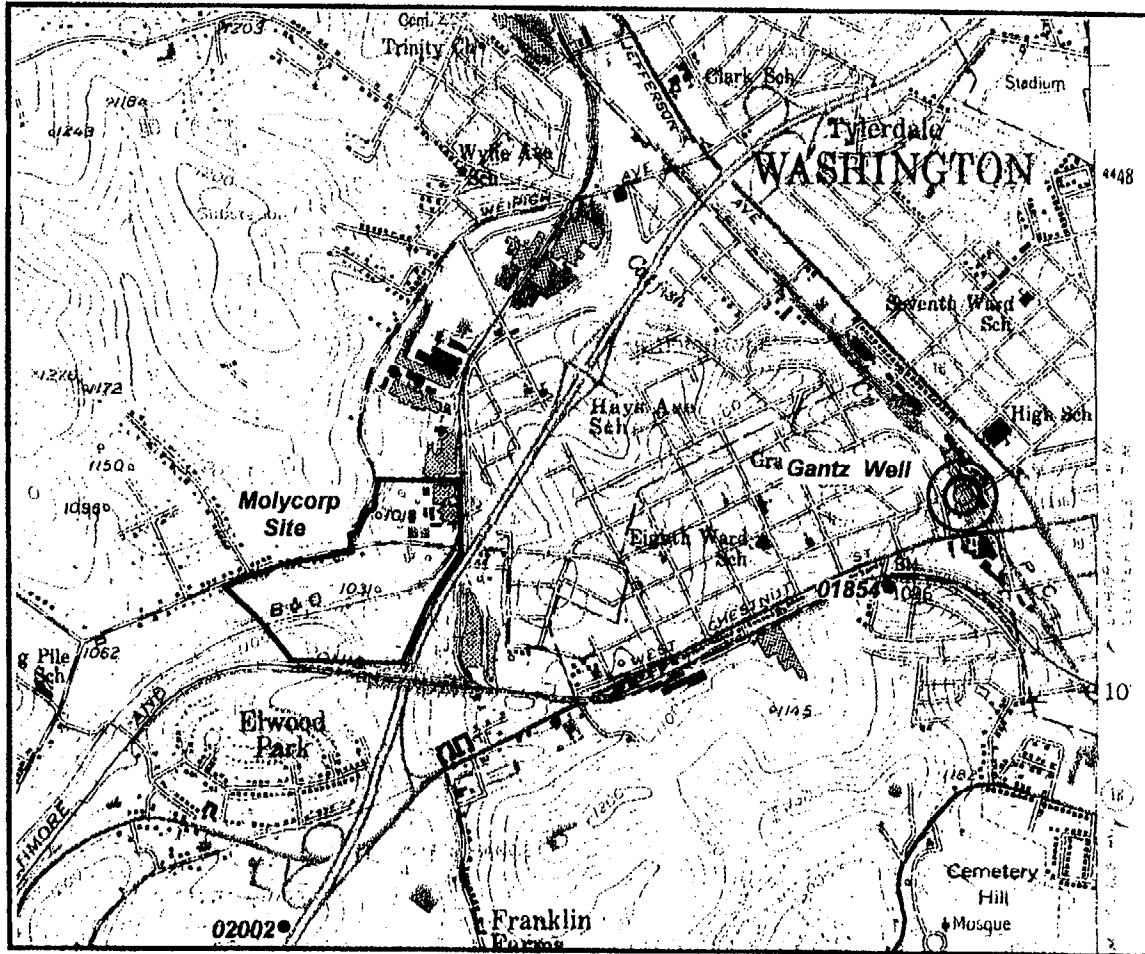
1. One mile north of Canonsburg: Upper layer, very hard and compact, like conglomerate, bluish gray.
2. One mile north of Canonsburg: Middle layer, compact, somewhat shaly, color bluish gray.
3. One mile north of Canonsburg: Lower layer, hard, compact, unctuous pearl gray.
4. Property of Dr. Shaner, in Somerset Township, 3 miles from Washington.

**References:**

Miller, BL: Limestones of Pennsylvania, Pennsylvania Geological Survey, M20, 1934.

Wagner, WR; Craft, JL; Heyman, L; Harper, JA; Greater Pittsburgh Region Geologic Map and Cross Sections, Pennsylvania Geological Survey, Map 42, 1975.

Historical well records available at the PA Geological Survey Office – open file.



**Molycorp Site**

Scale: 1 : 24,000  
1"=2,000'

## Allard, David

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**From:** Thomas Flaherty (412) 442-4013 [FLAHERTY.THOMAS@a1.pader.gov]  
**Sent:** Friday, April 16, 1999 10:30 AM  
**To:** allard david  
**Cc:** Charles Duritsa; David Janco; harper john; wallace.todd@dep.state.pa.us; chamberlain.denise@dep.state.pa.us  
**Subject:** Oil & Gas Management Review of Proposed Molycorp Site  
**Sensitivity:** Confidential

As Charles Duritsa requested, Oil and Gas Management has reviewed the location of the proposed Molycorp low-level radioactive waste site, with regard to impact on existing oil and gas wells. The proposed site is located in map section 6 on the Washington West 7 1/2 minute USGS Quadrangle, immediately west of the city of Washington, PA.

Information gathered from the Bureau of Topographic & Geologic Survey shows that the proposed facility is located inside the eastern edge of the Washington-Taylorstown Oil Field. Bureau of Oil and Gas Management maps and Bureau of Topographic & Geologic Survey maps show the location of known oil and gas wells. An old farmline map shows that at least 9 oil wells are known to exist on the subject property. Because the vintage of these wells goes back to the turn of the century, recordkeeping was poor at that time and it is entirely possible that more than 9 wells exist on the property. In addition to the wells located on the property, there are many oil wells in close proximity to the property in all directions, particularly to the west. The status of the wells is not presently known. However, since the wells are nearly a century old, it is a certainty that the wells were not cased and cemented as required for new wells by modern standards and regulation. Most of the wells were probably abandoned without having been plugged, or were perhaps plugged with the technology of the time, which would be inadequate in the present day. Because of the "low-tech" approach to old well design and plugging methods, and the likelihood that some of the wells were never plugged, the potential for downhole communication with surface fluids or contaminants exists. Having been drilled to depths of approximately 3000 feet, the wells have penetrated all the freshwater aquifer horizons. Potential exists for contamination of freshwater aquifers through these oil wells as well as for contamination of the petroleum reservoir which is apparently still in production in the area. Our records show that some of these old wells have been registered since 1985 when the requirement for registration of old wells went into effect. The five closest wells are #125-00123 (6000 feet west of the project), #125-02002 (3600 feet to the south), #125-01835 (5100 feet to the southwest), #125-01896 (3100 feet to the northwest), and #01854 (5300 feet to the east). The fact that the wells were registered indicates that the field is still in production.

A copy of the farmline map showing the known historic oil wells and the Molycorp property will be forwarded to you by mail for your information. Additional information can be gleaned from the published geologic report known as M-54: "Oil and Gas Geology of the Amity and Claysville Quadrangles, PA".

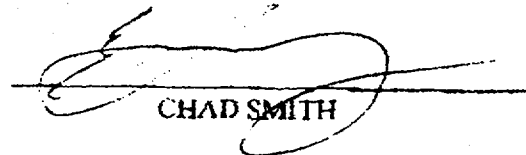
There are no underground natural gas storage reservoirs near the project site.

If you wish to review farmline maps, well records for the wells, or Report M-54, the information is available for public review at the Bureau of Topographic & Geologic Survey, 500 Waterfront Drive, Pittsburgh, PA 15222. A contact person for the Survey is John Harper, Chief, Subsurface Geology Division, at 412-442-4230.

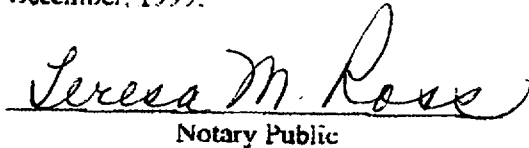
AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA )  
 ) SS:  
COUNTY OF WASHINGTON

I, CHAD SMITH, state that I am a member of the Board of Supervisors of Requestor Canton Township, that I am authorized to make this Affidavit on behalf of Canton Township, and that the facts set forth in the foregoing Reply to Molycorp's Response to Amendment to Request for Hearing are true and correct upon my personal knowledge as to a part and upon information and belief as to the remainder.

  
CHAD SMITH

SWORN TO AND SUBSCRIBED  
before me this 4th day of  
December, 1999.

  
Notary Public

Notarial Seal  
Teresa M. Ross, Notary Public  
Pittsburgh, Allegheny County  
My Commission Expires June 12, 2003  
Member, Pennsylvania Association of Notaries

CERTIFICATE OF SERVICE

I hereby certify that the original and/or a copy of the foregoing Reply to Molycorp's Response to Amendment to Request for Hearing by Canton Township, Pennsylvania has been served this date on the following in the following manner, which service complies with the rules and regulations of the U.S. Nuclear Regulatory Commission:

VIA FIRST-CLASS MAIL:

Administrative Judge Charles Bechhoefer  
Presiding Officer  
Atomic Safety and Licensing Board Panel  
Mail Stop T-3 F23  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

Dr. Richard F. Cole  
Special Assistant  
Atomic Safety and Licensing Board Panel  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

Executive Director for Operations  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

Office of the Secretary  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001  
Attention: Rulemakings and  
Adjudications Staff

Office of Commission Appellate Adjudication  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

John T. Hull, Esquire  
U.S. Nuclear Regulatory Commission  
Mail Stop 0-15 D21  
Washington, D.C. 20555

Molycorp, Inc.  
300 Caldwell Ave.  
Washington, PA 15301  
Attention: Mr. John Daniels  
Licensee

Randolph T. Struk, Esquire  
Thorp, Reed & Armstrong, L.L.P.  
One Riverfront Center  
Pittsburgh, PA 15222  
Counsel for Licensee Molycorp, Inc.

Jeffrey A. Watson, Esquire  
Smider & Watson, P.C.  
138 N. Franklin Street  
Washington, PA 15301  
Counsel for City of Washington

Date: December 9, 1999



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Special Counsel for Canton Township