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SAMPLING AND ANALYSIS PLAN

Belvada Apartments
101 S. Main Street
Tonopah, NV
NDEP Contract #10-008, Task M11-11

Prepared for:

State of Nevada
Department of Conservation and Natural Resources
Division of Environmental Protection
Bureau of Corrective Actions
901 S. Stewart Street, Suite 4001
Carson City, Nevada 89701-5249

February 4, 2011

Sampling and Analysis Plan for:

Belvada Apartments

101 S. Main Street

Tonopah, Nevada

February 4, 2011

Date

MGA Principal: ______________________

MGA Project Manager: ______________________

MGA QA Manager: ______________________

NDEP Case Officer: ______________________

NDEP Brownfields Program Coordinator: ______________________

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1. INTRODUCTION

McGinley and Associates, Inc. (MGA) has prepared this Sampling and Analysis Plan (SAP) for assessment activities to be conducted at the Belvada Apartments located in Tonopah, Nevada. These assessment activities are being funded by the State of Nevada Brownfields program. This SAP was prepared in accordance with the Nevada Division of Environmental Protection (NDEP) Quality Assurance Program Plan (QA Program Plan) for the Nevada Brownfields Program (NBP) (NDEP 2007).

The purpose of this project is to assess the presence of petroleum product contamination in the shallow soils, asbestos containing material (ACM), lead-based paint and mold.

1.1 Site Name

Belvada Apartments

1.2 Site Location

The site is located at 101 S. Main Street in Tonapah, Nevada. The site is located on assessor parcel number (APN) 008-135-09 which covers an area of approximately 0.11 acres. The building is currently vacant and is developed for residential, retail and commercial use.

1.3 Responsible Agency

This project is being conducted for the NDEP through State of Nevada Brownfields program. The investigation will conform to the NBP's QA Program Plan (NDEP, 2007).

1.4 Project Organization

Title/Responsibility	Name	Phone
Town of Tonopah		
Administrative Supervisor	Susan Dudley	(775) 482-6336
NDEP		
Program Coordinator for the Nevada Brownfields Program – Project coordination, liaison with Town of Tonopah	Jeff Collins	(775) 687-9381
Case Officer – Review SAP, quality assurance	David Friedman	(775) 687-9385
McGinley and Associates, Inc.		
Principal – Senior review, regulatory liaison	Joe McGinley	(775) 829-2245
Project Manager – Project management, regulatory liaison, coordinate field activities, data review, report preparation.	Tracy Johnston	(775) 829-2245
Quality Manager – Oversee implementation of SAP, review QA/QC procedures, data validation.	Tracy Johnston	(775) 829-2245
Environmental Scientist – Conduct sampling activities	Gene Johnson	(775) 829-2245
CAD Operator – CAD support	Tim Dory	(775) 829-2245

Administrative Assistant – Administrative support	Linda Comstock	(775) 829-2245
Contractors/Vendors		
Diversified Concrete – Core drill concrete floor to facilitate collection of soil samples		(775) 331-1411
Natural Link Mold Lab – Analysis of mold samples	Sean Abbott	(775) 746-3838
Crisp Analytical, LLC - Analysis of paint and ACM samples	Leslie Crisp	(972) 488-1414
Alpha Analytical Laboratories – Analysis of soil samples	Roger Scholl	(775) 355-1044

2. BACKGROUND

The building was previously developed with apartments and is currently vacant. The building contains suspect ACM and lead-based paint and the potential exists for the presence of mold. Apparent petroleum odors and staining were noted around an aboveground heating oil tank that is located in the basement of the building.

2.1 Sampling Area Description

The parcel occupies approximately 0.11 acre in a commercial area in downtown Tonopah. The property is bounded on the north by Brougher Ave, on the west by St. Patric Street and on the east by Main Street (Figure 2). Sampling will be conducted in the building located on the parcel. The building is six stories in height, including the basement. Samples will be collected from suspect ACM (insulation, dry-wall, etc.), painted surfaces, visible mold and shallow soils proximal to the aboveground heating oil tank which is located in the basement of the building.

2.2 Operational History

The building was constructed in 1906 – 1907. The building formerly contained apartments for residential use and was also occupied by a bank, convenience store, dress shop, bar, hair salon and other retail stores. The building has been vacant for several years.

2.3 Previous Investigations/Regulatory Involvement

2.3.1 Phase I ESA

MGA conducted on Phase I Environmental Site Assessment (ESA) of the subject parcel in October 2010. A copy of the Phase I ESA is on file at the NDEP. The Phase I ESA identified the aboveground heating oil tank as a Recognized Environmental Condition (REC). Assessment for the presence of asbestos, mold, lead-based paint and radon gas were not included in the Phase I ESA. The Phase I ESA report stated that radon gas is not a likely environmental concern as the site is located in Zone 2 of the U.S. EPA published map of radon zones.

2.4 Geological Information

The geology of the subject property has been mapped as Tertiary-age *Sedimentary Strata and Interbedded Tuffs,* as well as *Fraction Tuffs by Kleinhampl &Ziony* (1985). The Sedimentary Strata and Interbedded Tuffs deposits are described as chiefly volcanogenic sedimentary rocks of lacustrine and fluvia-tile origin intercalated with rhyolitic air-fall tuffs. Local algal reefs, marly and coquinoid limestone, and diatomite beds are also present. The Fraction Tuff deposits are described as lithic-rich rhyolitic to quartz latitic ash-flow tuffs. Groundwater is estimated to be several hundred feet below ground surface.

2.5 Environmental and/or Human Impact

No adverse human health effects associated with the contamination at this site have been reported or documented.

3. PROJECT DATA QUALITY OBJECTIVES

3.1 Project Task and Problem Definition

The purpose of this investigation is to assess for the presence of asbestos, lead-based paint, mold in the onsite building and petroleum hydrocarbons in the soil adjacent to the aboveground heating oil tank. Both qualitative (field screening) and definitive (laboratory) data will be collected during this investigation. Qualitative data will be collected using a photo-ionization detector (PID). Specifically, the shallow soils proximal to the heating oil UST will be screened for volatile organic compounds using the PID. The soils will also be screened for petroleum odors and staining.

3.2 Data Quality Objectives (DQOs)

The DQO process (EPA 2006) is a systematic planning tool that is used to establish performance or acceptance criteria. These criteria, in turn, serve as the basis for designing a plan for collecting data of sufficient quality and quantity to support the goals of a study. The DQO process consists of seven iterative steps, as described in the following sections and summarized in Table 1.

3.2.1 Step 1: State the Problem

There is a potential that asbestos, lead-based paint, mold and petroleum hydrocarbons are present in the building. These materials may pose a health hazard to humans. Analytical data is needed to assess for the presence of these materials and determine if remediation and/or additional assessment activities are needed.

3.2.2 Step 2: Identify Decisions

Analytical data for collected samples will be evaluated to determine if concentrations exceed regulatory action levels. The Nevada Administrative Code (NAC) 445A.2272 describes establishment of action levels for soil. Asbestos data will be compared to levels established in OSHA 29 CFR 1926.1101, NAC 618.850 to 618.986, NESHAPS 40 CFR 61.141 and AHERA 40 CFR Part 763. Mold data for samples collected inside the building will be compared to mold levels in samples collected outside the building (background/baseline concentration). Lead data for paint samples will be compared to levels established in 40 CFR Part 745 and TSCA 402(c). Results of the investigation will be used to determine if additional assessment and/or remediation is required.

3.2.3 Step 3: Identify Inputs

Information required to address project objectives includes quantitative analytical data for collected samples and regulatory action levels.

3.2.4 Step 4: Define Study Boundaries

Samples shall be collected within the onsite building. A mold sample (air) shall also be collected outside the building to establish a background mold concentration. Sampling shall be limited to suspect ACM, painted surfaces, mold (if observed based on visual inspection) and shallow soils proximal to the aboveground heating oil tank located in the basement of the onsite building. The duration of the assessment activities described in this SAP is approximately one week.

3.2.5 Step 5: Develop Decision Rules

Decision rules are specified in Table 1, and specify actions based on qualitative and definitive data.

Laboratory analytical data will be compared to regulatory action levels. If chemical concentrations in the soil exceed the regulatory action levels and the volume of soil exceeds the regulatory reporting limits, the soil contamination will be reported to the NDEP. Once the extent of soil contamination is adequately defined, a decision will be made as to whether remediation is required. If asbestos, lead, and/or mold concentrations exceed the regulatory levels, an abatement plan shall be prepared to remove the subject material.

3.2.6 Step 6: Specify Tolerable Limits on Decision Errors

This is not a statistically based study; sampling locations will be selected based on professional judgment.

3.2.7 Step 7: Optimize the Sampling Design

The number of samples will be determined in the field using professional judgment such that samples are representative of site conditions.

3.3 Data Quality Indicators (DQIs)

Data quality indictors (precision, accuracy, representativeness, completeness, comparability and sensitivity (i.e. PARCCS)) refer to quality control criteria established for various aspects of data gathering, sampling, and/or analyses. Precision is the degree of mutual agreement between or among independent measurements of a similar property (usually reported as standard deviation (SD) or relative percent difference) and relates to the analysis of duplicate laboratory or field samples. Accuracy is the degree of agreement of a measurement with a known or true value and is determined by comparing the reported laboratory value for a sample to a known or true concentration (i.e. matrix spikes, surrogate spikes, laboratory control samples and performance samples. Representativeness is the expression of the degree to which data accurately and precisely represent a characteristic of an environmental condition or population and relates to the method of collecting samples and determining sample locations (i.e. statistical sampling, professional judgment, etc.). Completeness is expressed as the percent of valid usable data obtained compared to the amount that was expected. Comparability expresses the degree of confidence with which one data set can be compared to another. Sensitivity is defined by the laboratory detection limits and are generally expressed in terms of method detection limits (MDLs) or reporting limits (RLs).

Precision and Accuracy: The measurement quality objectives (MQOs) for precision and accuracy for the analyses of the specific chemicals of concern (CoCs) in the soil are summarized in Table 3.

Representativeness: Sample locations will be selected using professional judgment and will adequately represent site conditions for the area(s) being investigated.

Completeness: The project goal is to obtain an adequate number of samples to characterize site conditions.

Comparability: No previous sampling has been conducted in the building.

Sensitivity: The laboratory reporting limits for the each analyte are summarized in Table 2. The reporting limits are well below the action levels and are adequate for this investigation.

3.4 Data Review and Validation

Data verification is the process of evaluating the completeness, correctness, conformance, and compliance of a specific data set against the method, procedural, or contractual requirements. Data verification evaluates whether sampling protocols, SOPs, and analytical methods were followed during data generation. Verification also involves examining the data for errors or omissions. Field and laboratory staff will verify that the work is producing appropriate outputs.

Data validation is a systematic process for reviewing a body of data against a pre-established set of acceptance criteria defined in this plan. Data validation is an analyte- and sample-specific process that extends the evaluation of data beyond data verification and is performed to determine the analytical quality of a specific data set. Validation involves a detailed examination of the data package to determine whether MQOs for precision, accuracy, and sensitivity have been met. For this environmental assessment, the intent of the data review and validation process is to verify that the specified levels of precision, accuracy, reproducibility, completeness, comparability, and analytical sensitivity of the final results are achieved, with respect to the project MQOs, and that the data fulfill project DQOs.

MGA's QA officer will supervise or perform data quality assessment tasks. MGA will consistently evaluate and document measurement data to monitor consistency with MQOs, to quantitatively assess data quality, and to identify potential limitations to data use. MGA will review field and analytical laboratory data generated for this project, including the following:

- Chain of custody documentation;
- Laboratory batch QC frequency; and,
- Results of batch and field QC analyses;

Laboratory Data: The laboratories will generate and review all laboratory data. Each data point will be assessed as non-qualified or qualified based upon the acceptance criteria. Data may be qualified as "estimated" (J-qualified); these data are used as is. Some data may be qualified as "rejected" (R-qualified) if critical QC parameters are not met; these data are unusable for any purpose. Sample re-analysis, for data not meeting MQOs, will be considered as a possible corrective action. Third-party data validation will not be performed.

3.5 Data Management

Soil and groundwater sampling will be conducted in accordance with MGA's standard operating procedures (SOPs). A unique identification number will be assigned to each sample. The number will be an alphanumeric sequence that serves as an acronym to identify the sample. For soil samples the sample location and sample depth will be incorporated into the sample identification designation. The following format will be used for the sample designation:

Soil Samples:

Sample ID: DEP003-SS 1 @ 1'

DEP003 - MGA Project Number

SS1 @ 1' - Sample type (soil sample) number and depth (feet below ground surface)

ACM Samples:

Sample ID: DEP003-ACM 1-Piping Insulation

DEP003 - MGA Project Number

ACM 1 - Insulation, boiler1 - Sample type (suspect ACM), number and location (piping insulation)

Paint Samples:

Sample ID: DEP003-PS 1 - Wall

DEP003 - MGA Project Number

PS 1 - Insulation, boiler1 - Sample type (paint sample), number and location (wall)

Fungal/Air Samples:

Sample ID: DEP003-AS 1 - Basement

DEP003 - MGA Project Number

AS 1 - Insulation, boiler1 - Sample type (air sample), number and location (wall)

Field logs shall be maintained throughout the project. The following information shall be included on the field logs: description of activities conducted, dates and times, field observations, deviations from sampling program, names of onsite personnel, sample locations.

Soil samples will be preserved in a cooler at 4 °C pending delivery to the laboratory. ACM, paint and air samples shall not be preserved or cooled. Samples shall be delivered or shipped to the laboratory under chain-of-custody protocol.

3.6 Assessment Oversight

Prior to commencing with field activities, the SAP will be reviewed by the Project Team. The MGA QA Officer will oversee QC of all field activities. If modifications to the proposed sampling program are required due to field conditions, the Project Manager shall be notified for direction. Any modifications to the sampling plan will be documented in the field logs and in the project report as "deviations from the sampling plan."

4. SAMPLING RATIONALE

Soil samples will be collected proximal to the aboveground storage tank at areas where apparent petroleum contamination is evident based on field screening. Asbestos samples shall be collected from suspect ACM and paint samples shall be collected from painted surfaces. Mold samples will be collected at locations where mold is suspected to be present, based on visual observations. An adequate number of samples shall be collected to represent site conditions. Professional judgment was used to select sampling locations that are likely to provide data to address project DQOs (Table 1). Decision statements formulated in the project DQOs are largely concerned with assessing for the presence of hydrocarbons, asbestos, lead-based paint and mold.

4.1 Soil Sampling

Two or three soil samples will be collected from the shallow soils (i.e. within two feet of ground surface) proximal to the aboveground storage tank.

4.2 Sediment Sampling

Sampling of sediments is not included in the scope of this investigation.

4.3 Water Sampling

Sampling of water/groundwater is not included in the scope of this investigation.

4.4 Biological Sampling

Biological sampling is not included in the scope of this investigation.

4.5 Asbestos Sampling

Samples will be collected from suspect ACM. An estimated five to ten samples will be collected. Samples shall be removed using a clean knife and shall be at least two square inches or two tablespoons in size. Care shall be taken to minimize disturbance to the material. The material shall be placed in a zip-lock bag which will be sealed, labeled.

4.6 Paint Sampling

Samples will be collected from suspect lead-based paint. An estimated five to ten samples will be collected.

4.7 Mold Sampling

Samples shall be collected from apparent mold spores. An estimated three to five samples will be collected. Air samples shall be collected from inside and outside the building to establish a background/baseline concentration.

5. REQUEST FOR ANALYSIS

Laboratory analyses are discussed in Section 5.1 below.

5.1 Analyses Narrative

5.1.1 Soil samples

Soil samples will be collected as described in Section 6.3. It is anticipated that two or three soil samples will be collected for analytical testing. The soil samples will be analyzed for Total Petroleum Hydrocarbons (TPH), extractable by EPA Methods SW 8015, Volatile Organics by EPA Method SW8260B and Poly Aromatic Hydrocarbons (PAHs), Select Ion Mode (SIM) by EPA Method SW8270C.

5.1.2 Suspect ACM

Samples collected from suspect ACM shall be analyzed for polarizing light microscopy (PLM/Stereomicroscopy bulk asbestos samples) using the methods described in 40 CFR Part 763, Appendix E to Subpart E (interim and EPA 600/R-93/116 (improved).

5.1.3 Paint

Paint samples shall be analyzed by Atomic Absorption (AA)/SW-846-7420.

5.1.4 Mold

Mold samples shall be analyzed by Fungal Microscopic Exam/25152-R01

5.2 Analytical Laboratory

Analytical testing on soil samples shall be conducted by Alpha Analytical Laboratories of Sparks, Nevada. Analytical testing on suspect ACM and paint samples shall be conducted by Crisp Analytical LLC of Carrollton, Texas. Analytical testing on mold samples shall be conducted by Natural Link Mold Lab of Reno, Nevada. Analytical testing and sampling handling shall be conducted in accordance with the laboratories standard operating procedures (SOPs).

6. FIELD METHODS AND PROCEDURES

6.1 Field Equipment

6.1.1 List of Equipment Needed

6.1.1.1 Soil Sampling

- field logbook and field data sheets
- brass sleeves and caps
- cooler
- ice
- sample labels
- personal protective equipment (Level D)

6.1.1.2 Suspect ACM, Paint, Fungal Mold

- field logbook and field data sheets
- personal protective equipment (Level D)
- knife/box cutter with retractable blade
- tape measure
- camera
- zip-lock bags
- surface tape

6.1.1.3 Air Samples (Mold)

- field logbook and field data sheets
- low flow (15 liters/minute) air pump (Zefon Bio-Pump, or equivalent)
- spore trap sampler (Air-O-Cell, or equivalent).

6.1.2 Calibration of Field Equipment

All field equipment will be calibrated according to the manufacturer's guidelines and specifications.

6.2 Field Screening

Soils shall be screened for VOCs using a PID.

6.3 Soil Sampling

Soil samples will be collected in areas where apparent petroleum product contamination is evident based on field screening. Soil sampling locations will be recorded in the field logbook as sampling is completed. A sketch of the sampling location will be entered into the logbook and any physical reference points will be labeled. Soil samples will be collected by advancing a brass tube into undisturbed soil. The tube will be sealed, labeled, and preserved in a cooler at 4 °C pending delivery to the laboratory for analysis.

6.4 Sediment Sampling

Not applicable, sediment sampling is not included in the scope of this investigation.

6.5 Water Sampling

No water samples will be collected during this investigation.

6.6 Biological Sampling

Not applicable, biological sampling is not included in the scope of this investigation.

6.7 Asbestos Sampling

Samples shall be collected from suspect ACM by cutting material using a clean knife. Samples shall be at least two square inches or two tablespoons in size. Care shall be taken to minimize disturbance to the material. The samples shall be placed in a zip-lock bag which will be sealed and labeled.

6.8 Paint Samples

Samples shall be collected from painted surfaces using a clean knife. The samples shall be placed in a zip-lock bag which will be sealed and labeled.

6.9 Fungal/Mold Samples

Samples shall be collected from fungal material using surface tape. Air samples will be collected in an Air-O-Cell cassette (or equal) using a low flow air pump. Samples shall be collected for a period of five minutes. Cassette shall be sealed, labeled and placed in a zip-lock bag.

7. SAMPLE CONTAINERS, PRESERVATION AND STORAGE

7.1 Soil Samples

Soil samples will be collected using clean brass tubes. The tube will be sealed, labeled, and preserved in a cooler at 4 °C pending delivery to the laboratory for analysis.

7.2 Asbestos, Paint and Fungal Samples

Asbestos, paint and fungal samples shall not be not be chilled. Care shall be taken to prevent deterioration or damage to sample during transit.

8. SAMPLE DOCUMENTATION AND SHIPMENT

8.1 Field Notes

8.1.1 Field Logbooks

Field logs will be completed describing all field activities. The following information will be included in the field logs:

- project name and location
- sample location and description
- site plan showing sample locations
- sampler's name (s)
- date and time of sample collection
- type of sample (e.g. soil, ACM, paint, fungal)
- type of sampling equipment used
- field instrument readings and calibration
- field observations and details related to analysis or integrity of samples (e.g. noticeable odors, colors, etc.)
- sample preservation
- lot number of the sample containers, sample identification numbers and explanatory codes, and chain-of-custody form numbers
- name of recipient laboratory

8.1.2 Photographs

Photographs will be taken at the select sampling locations. They will serve to verify information entered in the field logbook. For each photograph taken, the following information will be written in the logbook:

- time, date, location, and weather conditions
- description of the subject photographed

8.2 Labeling

All samples collected will be labeled in a clear and precise manner for proper identification in the field and for tracking in the laboratory. The samples will have pre-assigned, identifiable, and unique numbers. At a minimum the sample labels will contain the following information:

sample location, date and time of collection, analytical parameter(s), and method of preservation. Every sample will be assigned a unique sample number.

8.3 Sample Chain-of-Custody Forms and Custody Seals

All samples shall be delivered to the laboratory under chain-of-custody protocol.

8.4 Packaging and Shipment

Samples shall be shipped in a manner as to prevent damage or deterioration during transit.

9. QUALITY CONTROL

9.1 Field Quality Control Samples

Samples will be collected in accordance with industry standard procedures.

9.1.1 Assessment of Field Contamination (Blanks)

No blanks or duplicate samples will be collected during this investigation.

9.2 Background Samples

An air sample shall be collected from outside the building to establish background/baseline conditions.

9.3 Field Screening and Confirmation Samples

No confirmation samples will collected during this investigation.

9.4 Laboratory Quality Control Samples

Laboratory QC (e.g., matrix spike/matrix spike duplicate samples) samples will be analyzed to monitor the precision and accuracy of its analytical procedures. The volume of the collected soil samples will be adequate to conduct the VOC analysis and the laboratory QC analysis; therefore, no separate soil samples will be collected for laboratory QC purposes.

10. FIELD VARIANCES

As conditions in the field may vary, it may become necessary to implement minor modifications to sampling as presented in this SAP. Modifications to the approved SAP will be documented in the sampling project report.

11. FIELD HEALTH AND SAFETY PROCEDURES

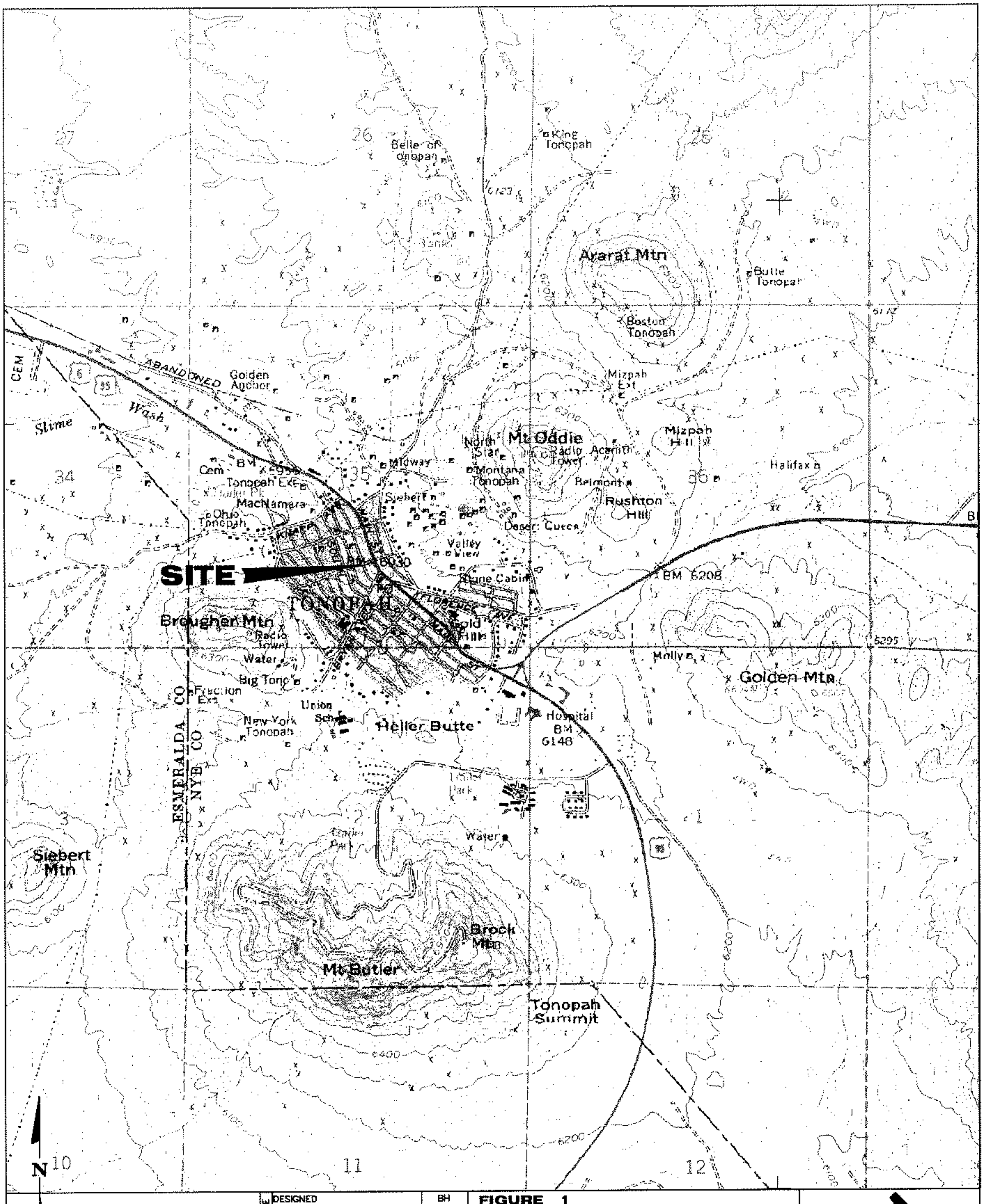
Care shall be taken to minimize disturbance of suspect ACM material and fungal material during sampling activities.

12. SCHEDULE FOR SAMPLING ACTIVITIES

MGA will commence with the activities proposed herein upon receiving NDEP approval of this SAP. It is anticipated that field activities will be completed within 30 days of receiving SAP approval. A draft report of findings will be submitted within 30 days of completing field activities.

13. REFERENCES

Final Nevada Brownfields Program Quality Assurance Program Plan, May 20, 2007, Nevada Division of Environmental Protection.



0 1000 2000
FEET

REFERENCE		
DESIGNED		BH
DRAWN		TAD
CHECKED		
APPROVED		

REVISIONS			
No.	DESCRIPTION	BY	DATE

FIGURE 1

PROJECT LOCATION MAP
-SHOWING-
FORMER BELVADA APARTMENTS
APN 08-135-09
TONOPAH, NEVADA

McGinley & Associates

SCALE: AS SHOWN	REVISION
JOB NO. 12345	A

0 50 100
FEET

REFERENCE		
DESIGNED		BH
DRAWN		TAD
CHECKED		
APPROVED		

REVISIONS No.	DESCRIPTION	BY	DATE

FIGURE 2

SITE MAP
-SHOWING-
FORMER BELVADA APARTMENTS
APN 08-135-09
TONOPAH, NEVADA

McGinley & Associates

SCALE: AS SHOWN	REVISION
JOB NO. DEP-003	A

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Table 2. Reporting Limits and Nevada Action Levels for Contaminants of Concern in Soil

Chemical	Laboratory Reporting Limit (µg/Kg)	Nevada Action Level (mg/Kg)[1]
Dichlorodifluoromethane	20	780
Chloromethane	40	500
Vinyl chloride	20	1.7
Chloroethane	20	-
Bromomethane	40	32
Trichlorofluoromethane	20	3,400
1,1-Dichloroethene	20	1,100
Dichloromethane	40	-
Trans-1,2-Dichloroethene	20	690
Methyl tert-butyl ether (MTBE)	20	220
1,1-Dichloroethane	20	17
cis-1,2-Dichloroethene	20	10,000
Bromochloromethane	20	-
Chloroform	20	1.5
2,2-Dichloropropane	20	-
1,2-Dichloroethane	20	2.2
1,1,1-Trichloroethane	20	38,000
1,1-Dichloropropene	20	-
Carbon tetrachloride	20	1.2
Benzene	20	5.4
Dibromomethane	20	110
1,2-Dichloropropane	20	4.5
Trichloroethene	20	14
Bromodichloromethane	20	1.4
Cis-1,3-Dichloropropene	20	8.1
trans-1,3-Dichloropropene	20	8.1
1,1,2-Trichloroethane	20	5.3
Toluene	20	45,000
1,3-Dichloropropane	20	20,000
Dibromochloromethane	20	3.3
1,2-Dibromomethane (EDB)	40	17
Tetrachloroethene	20	2.6
1,1,1,2-Tetrachloroethane	20	9.3
Chlorobenzene	20	1,400
Ethylbenzene	20	27
m,p-Xylene	20	17,000
Bromoform	20	220
Styrene	20	36,000

Table 2. Reporting Limits and Nevada Action Levels for Contaminants of Concern in Soil		
Chemical	**Laboratory Reporting Limit (µg/Kg)**	**Nevada Action Level (mg/Kg)[1]**
O-Xylene	20	19,000
1,1,2,2-Tetrachloroethane	20	2.8
1,2,3-Trichloropropane	40	950
Isopropylbenzene	20	-
Bromobenzene	20	1,800
n-Propylbenzene	20	21,000
4-Chlorotoluene	20	20,000
2-Chlorotoluene	20	72,000
1,3,5-Trimethylbenzene	20	10,000
tert-Butylbenzene	20	-
1,2,4-Trimethylbenzene	20	260
sec-Butylbenzene	20	-
1,3-Dichlorobenzene	20	-
1,4-Dichlorobenzene	20	12
4-Isopropyltoluene	20	-
4-Dichlorobenzene	20	-
n-Butylbenzene	20	-
1,2-Dibromo-3-chloropropane (DBCP)	60	690
1,2,4-Trichlorobenzene	40	99
Napthalene	40	-
Hexachlorobutadiene	40	22
1,2,3-Trichlorobenzene	40	490

1 EPA Region 9 Regional Screening Level (RSL) for industrial soil (Ref: EPA Region 9 *Regional Screening Level (RSL) Master Table, December 2009*)

Table 3: Method Precision and Accuracy Goals for Select VOCs (EPA Method 8260B)				
Matrix Spike Compound	Soil		Water	
	% Recovery	RPD%	% Recovery	RPD%
1,1-Dichloroethene	10-143	20	60-130	20
Trichloroethene	52-154	20	67-130	20
Benzene	57-143	20	67-130	20
Toluene	53-142	20	66-130	20
Chlorobenzene	55-142	20	70-130	20
Tetrachloroethene	55-152	20	61-134	20
MTBE	42-156	20	56-141	20
Vinyl Chloride	23-175	20	43-134	20

RPD Relative Percent Difference