

## INTRODUCTION

This Record of Decision (ROD) documents my decision to authorize management activities that will occur in the Spring Creek Project Area (SCPA), which is located north and west of the town of Ridgway in portions of Elk and Forest Counties, Pennsylvania. The SCPA contains all of the Spring Creek Watershed. The total project area consists of 56,093 acres located in portions of Highland, Spring Creek, Millstone Townships in Elk County and portions of Howe and Jenks Townships in Forest County. Approximately (71%), or 39,692 acres, of this area is National Forest System lands and is being considered for management. The remaining area is either privately owned or consists of state game lands under jurisdiction of the Commonwealth of Pennsylvania.

The Spring Creek Final Environmental Impact Statement consists of the Spring Creek Final Environmental Impact Statement as amended with Errata and Appendix I – Response to Comments as directed by 40 CFR 1503.4. The responses in Appendix I constitute factual corrections or explain why the comments do not warrant further agency response.

~~I have selected Alternative 3, supplemented with recreation activities proposed and described in Alternative 2, as described in the Final Environmental Impact Statement for the Spring Creek Project.~~ A description of Alternatives 3 and Alternative 2 (Recreation activities), with summaries of the treatments and actions that will occur is found within the contents of this Record of Decision and in the Spring Creek FEIS (pp. 26-32) and a detailed stand listing of the management actions can be found in the Spring Creek FEIS Appendix B (pp. 31-55 and 111-117) and Appendix C (pp. 95-108). A listing of the stand-specific mitigation measures that are a part of this alternative are found in FEIS - Appendix D. The maps for Alternative 3 and the Recreation activities in Alternative 2 detail the locations of treatments and can be found in the ROD and Spring Creek FEIS as well as larger more detailed and site-specific maps available on compact disc and the ANF web site. I will refer to my decision from this point forward as "Alternative 3 with Alternative 2 recreation activities"

## ENVIRONMENTAL IMPACT STATEMENT

The decision as documented herein, is based on my consideration of the environmental impacts discussed in the Environmental Impact Statement (EIS). The U.S. Department of Agriculture – Forest Service (FS) was the lead agency in preparing the EIS. An interdisciplinary team composed of Forest Service specialists oversaw all aspects of the EIS analysis.

## PURPOSE AND NEED FOR THE PROJECT

### Purpose of the Proposal

The purpose of the Spring Creek project is to implement management direction as outlined in the Allegheny National Forest (ANF) Land and Resource Management Plan (USDA-FS 1986a), while addressing site-specific needs and opportunities at the watershed level to move the SCPA from the existing condition towards the desired condition.

The Forest Plan sets management direction for the ANF through the establishment of short-term (10-15 years) and long-range goals and objectives through the year 2035. It prescribes the standards, practices, approximate timing, and in some cases the spatial arrangement, necessary to achieve goals and objectives. The Forest Plan prescribes the monitoring and evaluation needs to ensure that direction is followed; measures quality and quantity of actual operations against predicted outputs and effects; and forms the basis to implement revisions.

The Allegheny National Forest Land and Resource Management Plan provides programmatic direction for how the ANF is to be managed for these sustainable, multiple benefits. The Forest Plan divides the

## Cumulative Effects

The Cumulative Effects area for the transportation resource is the SCPA. Many of the effects associated with roads would occur in and around the SCPA. It was noted before that some transportation proposals occur outside of the SCPA. This is due to the networking nature of the road system as compared to the watershed project boundary. These road proposals are included in cumulative effects and calculations. Also considered in the transportation cumulative effects section are road proposals in projects that have yet to be carried out that have been approved by past NEPA documentation, ongoing OGM activities, and other FS projects in the foreseeable future that may occur within or near the SCPA.

### Road Density

There are 5.1 miles of new construction and 3.5 miles of existing roads that will be added to the Forest Service transportation system as a result of previous NEPA decisions in the SCPA. These road segments are all in MA 3.0.

OGM development is ongoing within the watershed. At the current average rate of 5 wells/year being drilled, there will be approximately 50 wells drilled per decade and 4.7 miles of new road construction. These roads are considered non-system roads when built with a road management objective that is closed. They contribute to the overall road density that represents roads for all jurisdictions within the watershed. Since the site specific areas where the roads may occur is unknown at this time, the road density by MA cannot be calculated for the 4.7 miles of road. Although there are no site specific proposals at this time some wells may also be plugged and the non-system road to those wells, unless needed for resource purposes, may also be decommissioned, which could decrease the OGM road density in the SCPA.

Transportation proposals for other Forest Service projects in the area are too early in developmental stages to come up with site-specific treatments and numbers. The Brush Creek NOI and treatments proposed show no road development within the SCPA that will affect road density.

With the addition of the newly constructed roads to the system for the East Side EIS, which occur in MA 3.0 in the SCPA, the resulting cumulative road density by alternative is calculated to be: Alternative 1 (1.9 mi/square mi), Alternative 2 (2.1 mi/square mi), and Alternative 3 (2.0 mi/square mile), Alternative 4 (2.0 mi/square mile) for that MA. With the implementation of any of the alternatives, plus the implementations of the foreseeable transportation proposals, the FS road densities will remain within the standards and guidelines established within the Forest Plan for the MAs within the SCPA.

The Spring Creek RAP identified up to approximately 28 miles of new road segments that could be constructed within the SCPA for future management. Alternative 2, however, proposed the greatest amount of new construction (6.6 miles). Road building in the second decade 2013-2023 will likely be less than the number that is reflected in the Spring Creek RAP, but exact amounts and site specific areas cannot be calculated at this time. Other factors that may affect Forest Service road densities could be the addition of Forest Service system roads and the decommissioning of Forest Service system roads. Even if all 28 miles of the new road construction were to occur in the SCPA (all occurs in MA 3.0), road densities will still be approximately 2.5 miles/square mile in MA 3.0. Considered cumulatively, the road density will still meet Forest Plan standards and guides when you add the road miles proposed in this project, those approved through East Side, and the second decade estimate for the SCPA.

### Road Management

New roads constructed and additional roads added to the transportation system will total 8.6 miles in the East Side EIS within the SCPA. Table 26 and Table 27 reflects the cumulative changes in TSL and the amount of Open, Closed, and Restricted Forest Service system roads for the SCPA by alternative, respectively. This table incorporates previously approved NEPA projects that have road proposals yet to be accomplished. On going and future OGM road development is not included in this table. Any OGM roads when built will be closed to the public and traditionally built to a standard that is similar to TSL D. Other future Forest Service projects could occur within the watershed, but no road proposals have been defined for the SCPA at this time, therefore they will not be included in Table 26.

**Table 26: Cumulative - Forest Service System Road TSL Levels – Spring Creek**

TSL	Current Condition (mileage)	Alt 1	Alt 2	Alt 3	Alt 4
A	0.0	0.0	0.0	0.0	0.0
B	0.0	0.0	0.0	0.0	0.0
C	55.5	55.8	57.5	55.8	57.5
D	54.0	62.3	75.3	68.7	68.4
<b>Total</b>	<b>110</b>	<b>118</b>	<b>133</b>	<b>125</b>	<b>126</b>

As noted in Table 26 there have been no additions to TSL A or B within the SCPA. Cumulatively, only 0.28 miles of TSL C and 8.3 miles of TSL D will be added to the Forest Service Transportation System, as a result of East Side EIS. When added to the Spring Creek totals from Table 17, there is a minor increase in TSL C miles and larger increase in TSL D miles. When looked at cumulatively, Alternative 2 and 4 have the greatest amount of "C" level roads and Alternative 2 has the greatest amount of "D" level roads. Alternative 1 and 3 has the least amount of "C" roads and Alternative 1 has the least amount of "D" level roads.

**Table 27: Cumulative - Percentage of FS Roads by Road Management Objective within SCPA**

Road Management	Forest Plan Standard	Existing Condition (mileage/%)	Alt 1	Alt 2	Alt 3	Alt 4
Open	20%	40/37%	40/34%	40.3/30%	40.3/32%	40.3/32%
Closed	60%	32/29%	37.9/32%	44.7/34%	38.8/31%	38.5/30%
Restricted	20%	38/34%	40.7/34%	48.4/36%	45.8/37%	47.3/38%
<b>Total</b>	<b>100%</b>	<b>110/100%</b>	<b>118/100%</b>	<b>133/100%</b>	<b>125/100%</b>	<b>126/100%</b>

Table 27 indicates the cumulative percentages of FS roads by Road Management Objective within SCPA. The table includes both Spring Creek proposals by Alternative and the changes within the East Side EIS that are located within the SCPA. As a result of East Side no roads will be added to the "open" category to the Spring Creek totals. However approximately 5.9 miles will be added to the "closed" category and 2.7 roads to the "restricted" category. Cumulatively the road system in the watershed still falls short of the overall Forest Plan goals of (Open-20%), (Closed-60%), and (Restricted-20%). Alternative 2 comes closest to the Forest Plan goal of 20% open and 60% closed. Alternative 1 comes closest to the FP goal of 20% Restricted. For comparison purposes, the existing Forest Service roads and

their Road Management percentages for the entire ANF are currently 36% Open, 30% Restricted, and 34% Closed (USDA-FS 2003b, p. 13).

Individual road proposals are made with the Forest Plan objective in mind but the site-specific resource needs for a certain road section drive many of the decisions on an individual road basis.

### Unroaded Areas

There are 31 Unroaded Areas (URA) over 500 acres on the ANF as defined by the Forest Road Analysis Report (USDA-FS 2003b, p.27).

All four unroaded areas over 500 acres affected by the Spring Creek alternatives will remain over five hundred acres in size regardless of the Spring Creek decision based on the best and current road information. This statement applies to the total area for SC 1-4 that are located both in and outside the SCPA.

However, there are activities that could affect the size and shape of the unroaded areas in the future and include the following:

- Unclassified roads (particularly private roads) could be re-classified
- Building of state, private or OGM roads that become **classified**. At the current rate of well development (average 5 wells per year) approximately 4.7 miles of new road construction relating to OGM development could occur in the next decade. Depending on location, this could change the size and shape of the unroaded areas. At the same time decommissioning of state, private, and OGM could remove classified roads from the SCPA, which may increase the size and change the shape of the unroaded areas.
- The Brush Creek scoping proposals include road building in SC 1 in the Brush Creek Project Area, which could change the size and shape of that unroaded area depending on the decision in that project. Note: Part of SC 1 is in the SCPA.
- Future Forest Service projects could propose new road construction, addition of **classified** roads, and the decommissioning of **classified** roads within the cumulative effects area that may change the size and shape of the unroaded areas in the future. At this time the site specific proposals are not known.

At this time future classified road miles that may affect unroaded areas are unknown and cannot be mapped, hence the final shape and acres of the four-unroaded areas are difficult to present. It should be noted that unroaded areas mapped in the Spring Creek RAP included the new construction road miles and approved in the East Side EIS as existing classified roads, therefore they were considered in development of the unroaded areas and subsequently incorporated in the cumulative effects.

### **Summary of Mitigation Measures and Effectiveness**

No specific mitigation measures were identified for the transportation system in this section. Please refer to the Soil, Hydrology, Wildlife, and Recreation Sections, which identify mitigation measures relating to seasonal restrictions on road proposals, timber hauling, and measures relating to surfacing materials.

Limestone surfacing is proposed for some road segments. See the soils, hydrology, and aquatics sections for the benefits and effects to water quality. Limestone surfacing also helps to keep road maintenance costs down in regards to surfacing. Some of the major Forest Service roads receiving limestone surfacing include FR 136, FR 130, FR 131, FR 226, FR 227, FR 403, FR 124, FR 502, FR 661, FR 491,

FR 338B, FR 337A, FR 584, and Township Route 322. A full list of the roads and road segments receiving limestone proposals is located in Appendix F – Transportation – Section 3.

## OIL, GAS AND MINERALS

### Affected Environment

In September of 1923, President Calvin Coolidge signed a proclamation forming the Allegheny National Forest. The lands forming this newly created National Forest were for the most part purchased from various companies and individuals under the Weeks Law (1911). Many of the original owners kept their subsurface mineral rights while others sold their rights to a third party. The United States Government owns only seven percent of the mineral rights under the surface of the ANF; the remainder is in private ownership. The subsurface owners have the right to develop their mineral estates. The public has expressed concerns regarding oil and gas development on the Forest, but is not generally aware of the limitations on Forest Service authority with regard to these privately owned minerals.

The Forest Service, the private mineral developer, and the Commonwealth of Pennsylvania are jointly responsible for protection of the surface resources. The ANFs management objective, as defined by the courts, is to negotiate to the greatest extent possible with individual developers to manage and protect the surface resources while allowing the development of their mineral rights.

**Table 28: Mineral Ownership and Status**

Status	Forest Service Acres	Ownership/ Acres
USA-Owned Minerals		34,973
- Withdrawn (Hickory Creek/River Islands Wilderness and National Recreation Areas)	13,960.57	
- Mineral ownership only	4,297.00	
- Leased (3 current leases)	1,026.27	
- Available for lease	15,689.12	
Outstanding and Reserved Ownership		478,283
<b>TOTAL ACRES (rounded to nearest whole acre)</b>		<b>513,256</b>

Table 28 depicts mineral ownership and status on the ANF. Forty percent (13,961 acres) of the total USA-owned mineral acreage is not available for exploration and/or development and 60 percent (21,012 acres) is available. The "available" acreage represents only four percent of the Forest's total land base of 513,256 acres. The subsurface oil/gas rights on the remaining 478,283 (93%) acres are reserved or outstanding (private ownership). There is one USA-owned mineral tract in the SCPA. It is a 61-acre tract near Byromtown not currently under lease.

Mineral owners have the right to access National Forest system lands to develop their mineral estates. Operators build their roads in accordance with standards set forth by the Pennsylvania Bureau of Oil and Gas Management, of the Pennsylvania Department of Environmental Protection (DEP). DEP is the regulatory authority, not the U.S. Forest Service. DEP road standards are protective of the environment (e.g., preventing sedimentation), but do not reflect the same standards as a Forest Service system road.

Oil and gas operators also utilize Forest Service system roads. It is therefore important to consider this use prior to closing Forest Service system roads, in order to lessen or prevent needless soil disturbance.

Development of privately held oil and gas (OGM) resources has occurred throughout the SCPA. The area contains the Sackett Oil Field, where the most intensive development has occurred. Our records show that there are over 1898 active, inactive, or plugged wells within the SCPA. Approximately 80 percent of the wells are on National Forest system lands. Some natural gas wells have been producing continuously since the late 1800's.

Most new drilling and development has occurred in and around the Sackett Oil Field. Based on ANF potential rate of well development, there is an average of 16 wells per year being developed in the SCPA. Much of the work occurring currently in the Sackett Oil Field is the reworking of existing wells. In recent years, there has also been some plugging of existing wells. This average (16 wells/per year) has not been realized in the past few years. Since 1998, twenty-eight new wells have been drilled in the SCPA. We anticipate future development to occur at a similar rate, which results in about an average of five wells per year. This number will be used in this analysis. However, OGM development is highly variable depending on oil and gas markets, suitable investors, technology, and mineral reserves. OGM access roads are constructed in conjunction with new developments. Maintenance-type OGM activities are occurring in the rest of the SCPA, particularly in the Owls Nest area where a large natural gas field exists.

According to the new Forest Service Roads Analysis Process, the ANF is required to analyze the effects to resources from all roads in the SCPA and develop recommendations. If concerns exist regarding private oil and gas roads on National Forest system lands, the Forest works with oil and gas operators to identify opportunities for improvements to their roads; however, the Pennsylvania DEP is the regulatory agency regarding oil and gas development, including access roads. Opportunities to improve OGM roads were identified through the Spring Creek Roads Analysis (USDA-FS 2002a, Appendix B - Table 2). The SCPA contains segments of private oil and gas access roads identified by the Forest Service with opportunities for improvement. Forest Service Resource Administrators will work with the OGM operators to improve these road segments.

Within the SCPA there are several pipeline and electric line rights-of-ways that exist to facilitate oil and gas operations within and outside the project. These pipeline right-of-ways are designed for light administrative and maintenance traffic only.

Locatable minerals, generally referred to as "hardrock" minerals, are intrinsically valuable deposits, such as an ore deposit or precious mineral resource. There are no locatable minerals underlying the ANF. A salable or "common variety" mineral is one with no intrinsic material value, such as sand, stone, or gravel. The ANF owns all of the common variety minerals on the forest. The principal material used to surface low volume roads on the ANF is pit run sandstone. From ANF GIS data obtained in FY 2000, there were 305 open (active) pits, and 196 closed (inactive) pits on the ANF. To reduce the cost of roads and road maintenance, many small pits have been established on the ANF. By having many small pits, the haul cost can be reduced. Over time, the best and easiest accessed pit material has been used. The quality, quantity, and ease of obtaining pit material are decreasing. For various reasons, alternative surfacing materials such as limestone are being used or investigated.

There are currently 38 active pits, 23 inactive or depleted pits, and 3 rehabilitated pits in the SCPA. This number reflects updated information gathered since completion of the Spring Creek Roads Analysis (USDA-FS 2002a, p. 26). There is the potential to develop 15 additional pits in the SCPA.

## Environmental Consequences

### Direct and Indirect Effects

Table 29 identifies the number of new pits proposed for development, and the number of existing pits that will be expanded and activated and an estimated amount of clearing measured in approximate acres needed for transportation and other proposals in the alternatives. The information presented in Table 29 is based upon field estimates of additional clearing needed. According to the proposals, 1 to 1.5 acres of land is used for new pit development while pit expansion ranges from 0.3 acres to 0.8 acres per pit. Pit activation involves gathering stone by ripping or blasting; therefore no additional acreage expansion is anticipated.

Each of the action alternatives proposes both new pit development and expansion and activation of existing pits in support of transportation and other activities. This will result in additional clearing for the project and loss of stone at pit sites that is an irretrievable, irreversible action. Total disturbed area due to pit development is located in Table 29. When a pit is depleted, it is rehabilitated by planting vegetative cover which benefits wildlife. Some pit proposals occur outside of the SCPA border and will be analyzed in support of the management activities. These actions were taken because of the availability of stone in the pit, pit status, and the location of the pit in conjunction with nearby proposed roadwork. By having pit proposals in these areas, access and haul costs are reduced and new pit development is reduced elsewhere. In Alternative 1 no additional pits would be developed because of Spring Creek proposals and hence, no additional clearing would take place.

**Table 29: Stone Pit Development Activities and Clearing Acres**

Activity	Alt. 1	Alt. 2	Alt. 3	Alt. 4
New pit development (#)	0	3	2	2
Existing Pit Expansion (#)	0	21	19	19
Activate Existing Pit (#)	0	4	4	3
Clearing (acres)	0	14.7	8.5	11.9

Other management proposals within the project such as those designed for silvicultural, wildlife, and recreation objectives tend to have limited effects on the oil and gas resource activity. Cooperation between the OGM industry and the Forest Service has resulted in dual use of roads for management, negotiated pipeline and right-of-way access, and areas planted for wildlife habitat improvement. See Summary of Mitigation Measures and Effectiveness below for other items in timber sale contracts that protect the minerals owners and their equipment.

### Cumulative Effects

The cumulative effects area for OGM activity is the SCPA. Most of the activity within the watershed is expected to occur in and around the Sackett Oil Field, which averages 5 wells per year. Other activities such as well plugging and road and right of way development are also expected to continue. Through continued cooperative efforts and the mitigations mentioned there are anticipated to be no significant cumulative effects to the oil and gas mineral resources and their owners from the Spring Creek management proposals.

Use of pit material is expected to continue. Future well development and road activities are expected to continue. These actions will need stone sources. At the average rate of 5 OGM wells per year, approximately ½-acre of a pit expansion per year is expected to occur.

The quality, quantity, and ease of obtaining pit material are decreasing. For various reasons, alternative surfacing materials such as limestone are being used or investigated. Limestone surfacing is proposed on over 23 miles of roads within the watershed in all action alternatives. Both limestone surfacing, used as an aid in long term road maintenance and to protect water quality, and the amount of road decommissioning proposed (over 20 miles in all action alternatives) reduce the need for native pit run stone thus lessening the amount of future pit development.

### Summary of Mitigation Measures and Effectiveness

A mitigation measure is included with the timber sale contract to protect pipelines, well locations, roads, utility corridors, and other improvements used by mineral owners or special use permittees for all activities conducted in the SCPA. The effectiveness of this measure lays in avoidance and in the fact that use of existing rights-of-ways, such as pipelines, are negotiated with the developer during operations that alleviates or minimizes the potential for damage. See Appendix D – Mitigation Measures.

## AIR QUALITY

### Affected Environment

The Clean Air Act of 1977 (CAA) and amendments created the National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. The NAAQS specify allowable concentrations and exposure limits for various pollutants. The Environmental Protection Agency (EPA) is charged with developing criteria for attaining and maintaining the NAAQS. NAAQS have been established for six principal pollutants, which are called "criteria" pollutants. They are listed in Table 30. Units of measure for the standards are parts per million (ppm) by volume, milligrams per cubic meter of air ( $\text{mg}/\text{m}^3$ ), and micrograms per cubic meter of air at 25° C ( $\mu\text{g}/\text{m}^3$ ).

The ANF is within a part of Western Pennsylvania (Warren County) classified by the EPA as exceeding standards for Ozone. Warren County is also in non-attainment for Sulfur Dioxide.

The SCPA lies in portions of Elk and Forest counties in northwest Pennsylvania. These counties do not exceed the National Ambient Air Quality Standards (NAAQS) for any of the six principal pollutants established by the Environmental Protection Agency (EPA). The counties are considered **attainment areas** for those standards.

The region, including the SCPA, is listed as a Class II air shed in accordance with the Clean Air Act Amendments of 1977. This category allows a moderate deterioration of air quality not to exceed the national ambient air quality standards. The U.S. Forest Service has established no separate air quality targets for Class II air sheds.

Spring Creek Pit Proposals

bjmarocco; 04/11/03 (revised: 05/01/03)  
 from coverage: scpitact

Scpitact#	Scpitactid	CIS ID#	Modeda	Status	Alt1	Alt2	Alt3	Alt4	Allocation/Access		
					Proposa	acres	proposal	acres	proposal	acres	
8	46	sc25	dig0	depleted	expand	0.5	expand	0.3	expand	0.5	FR 184
16	115	sc22	dig0	open	activate*		activate*				FR 167(SGL28 east bdy.)
75	7	sc21	GPS3	open	expand	0.3	expand	0.3			NS24835(SGL28 south bdy.)
79	3	sc27	GPS3	open	activate*	0	activate*	0	activate*	0	FR344
80	8	sc14	GPS3	open	expand	0.3	expand	0.3	expand	0.3	FR266
107	113	sc20	GPS3	open	expand	0.5	expand	0.5	expand	0.5	NS22575; via FR230
108	114	sc19	GPS3	open	expand	0.5	expand	0.5	expand	0.5	NS25009; via FR227
109	116	sc18	GPS3	open	expand	0.8	expand	0.3	expand	0.8	FR227D
115	131	sc24	GPS3	open	expand	0.5	expand	0.5	expand	0.5	FR228D
117	134	sc28	GPS3	open	expand	0.5	expand	0.5			FR383
143	920	sc23	GPS3	depleted	activate*	0	activate*	0	activate*	0	NS26320; via FR130
160	124	sc16	dig0	open	expand	0.5	expand	0.5	expand	0.5	FR404
165	104	sc1	GPS3	open	expand	0.8	expand	0.3	expand	0.5	FR632
166	918	sc2	GPS3	open	expand	0.5			expand	0.5	FR445
167	4	sc3	GPS3	open	expand	0.8			expand	0.8	FR224
168	88	sc4	GPS3	open	expand	0.5	expand	0.3	expand	0.5	Junct. FR335/FR580
169	36	sc5	GPS3	open	expand	0.5	expand	0.5	expand	0.5	FR581A
170	930	sc6	GPS3	open	expand	0.3	expand	0.3	expand	0.3	NS25008; via T313 (North Sackett)
171	185	sc7	dig0	open	expand	0.3	expand	0.3	expand	0.3	NS23915; via T313 (East 4 Cors.)
172	927	sc8	GPS3	depleted	activate*	0	activate*	0	activate*	0	NS22239; proposed 124E
173	193	sc9	dig0	open	expand	0.3	expand	0.3	expand	0.3	NS22240; proposed 124E
174	445	sc10	dig0	open	expand	0.5	expand	0.5	expand	0.5	NS22233; via proposed 124E
175	446	sc11	GPS3	open	expand	0.5	expand	0.5	expand	0.5	NS22222; via FR661
176	190	sc12	GPS3	open	expand	0.8	expand	0.3	expand	0.8	NS25256; via FR338
177	934	sc13	GPS3	open	expand	0.5	expand	0.5	expand	0.5	FR403
67	119	sc26	dig0	tested found stone	develop new	1.5			develop new	0.8	FR442B
159	139	sc17	DIG0	guess	develop new	1					NS3379; via T327 (Parrish)
161	126	sc15	dig0	tested found stone	develop new	1.5	develop new	1	develop new	1.5	FR775
						14.7		8.5		11.9	

\*activate: for depleted pits or pits at maximum expansion, pit run volume would be generated by ripping or blasting  
 therefore no additional acreage expansion is anticipated

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